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Original Articles

TECHNIC OF ABDOMINAL HYSTERECTOMY.

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New methods for the removal of the uterus in whole or in part by the abdominal route have become so numerous that it would seem impossible to present anything that is new. The recent modifications in technic have been, however, for the most part, designed to shorten the time of operation at the expense of exactness, in the hope of thereby lessening shock. Surgeons still seem to believe that the duration of an operation can be measured in minutes and hours. The condition of the patient at the conclusion of an operation is the only index as to whether the operation has been a short or a long one. Ten minutes is a long time for an operation if the patient is shocked; two hours is a short time if the patient wakes up promptly with everything in perfect condition.

It is a great fallacy to believe that time is the only or even the chief element in the production of shock. It is the degree of injury to nervous tissue and loss of blood which are the primary elements, and a rough operator will shock a patient more in a short time than a gentle one will in a much longer time.

Those who advocate a technic that has for its chief end the abbreviation of the time of the operation and who purchase this speed by mass ligatures and crushing forceps seem to overlook the fact that a crushed stump of a ligament wound up in a mass of peritoneum and all held together by a tightly drawn ligature may continue its shocking influence long after the surgeon has gone home. For him the time of operation has been shortened it is true, but for the patient it has been indefinitely prolonged.

With these preliminary points in mind I do not hesitate to present a technic that has grown in my hands in the course of years which aims at anatomic exactness rather than at speed. I have aimed to treat the pelvic stumps with the same consideration that is given the stump of an amputated limb. The points to be observed in both instances are the same: 1. Remove what is diseased. 2. Tie that which bleeds and nothing more. 3. Arrange the remaining parts so as to preserve the best possible function. 4. Cover the whole with the natural covering of the parts.

TECHNIC OF THE OPERATION.

The technic is as follows: The incision is made in the median line and the uterus or tumor delivered, if possible. The broad ligament is then grasped on either the mesial or lateral side of the ovary, depending on whether this organ is to be removed or not. The fingers of the left hand are placed behind the ligament (Fig. 1) and the blade of the peritoneal scissors[1] is passed below the anterior layer of the peritoneum and above the vessels. The peritoneum is cut to the median line or entirely across to the opposite side as desired. The peritoneum is pushed gently back with gauze or with the tip of the scissors. The ovarian vessels are then located and ligated by passing eye first a needle threaded with No. 1 catgut. The artery is isolated and tied separately, or the ovarian veins may be included in the same ligature with the artery, since they lie close together and are both small (Fig. 2). In case of varicosities of the broad ligament, however, the veins should have a separate ligature. The uterine veins should next be tied. They lie above the uterine arteries and may conveniently be tied first. The point of ligation of the uterine artery varies with the conditions to be met. If the cervix is to remain I prefer to tie it close to the uterus, but if the cervix is to be removed, certainly in operating for cancer, I prefer to tie it lateral to the point of bifurcation. It is necessary in this instance to expose the ureter and tie lateral to it. The number of veins requiring separate ligation varies, usually not more than two separate ligations need be made on either side, but in large vascular fibroids three or more may be applied with advantage. Many of the cuts in standard textbooks show the arteries alone ligated. The veins, too, require ligation quite as much as the arteries.

After the ligatures have all been placed the broad ligament is cut down to, but not through, the peritoneum. The fibrous tissue with the vessels now retract and the posterior peritoneal layer may be cut through, some distance from the plane of severance of the fibers, forming in this way a peritoneal flap which is to be used later to cover the raw surfaces (Figs. 3 and 6). If the cervix is allowed to remain it is cut wedge shaped (Fig. 3). The cut surfaces so made are then united, after treating the canal as one sees fit, with a figure-of-eight suture drawn tight enough to hold the surface in apposition (Fig. 4). These sutures it should be noted do not penetrate the peritoneum. The depth of the sutures may depend on the disposition of the stump to ooze. When the suture is tied the cervical canal is effectually closed off above (Fig. 5). The peritoneum is now united over the raw edges of the broad ligament and the stump of the cervix (Fig. 5). A Lembert suture or a matress, using No. 0 plain catgut is best. This suture penetrates the peritoneum and nothing else and is drawn just tight enough to bring the surfaces gently together.

When the cervix is removed the vault of the vagina is caught with forceps as it is being cut in order to pre-

1. The scissors used in this operation are made by grinding off 3 mm. of the upper blade of the Greg Smith's peritoneal scissors and rounding off the lower blade to a probe point. This rounded point can be easily thrust through the peritoneum and it then follows the space between the peritoneum and the blood vessels without injuring either (Fig. 1).

vent retraction. The stumps of the broad ligaments are grasped and are included in the first several sutures that close the vault of the vagina. Figure 6 makes this plain without further comment. The purpose of this maneuver is to prevent the sagging of the vagina. In extensive operations for cancer this procedure is not feasible, for too much of the broad ligament and vagina are removed to permit approximation.

After the broad ligaments are fastened, as above indicated, a gauze drain is passed into the vagina (Fig. 7) or the entire vagina may be closed without drainage. In

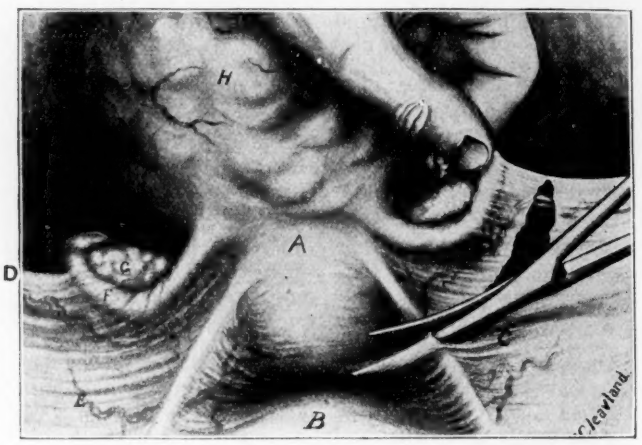

Fig. 1.—Cutting the anterior peritoneal layer of the broad ligament; the blood vessels are not cut with this. A, uterine; B, bladder; C, anterior layer of broad ligament; D, ovarian vessels; E, uterine vessels; F, Fallopian tube; G, ovary; H, tumor.

either event the operator may, if he wishes, place several subperitoneal sutures; this appears desirable sometimes to prevent oozing if there is much loose tissue. I usually prefer to omit it.

After the gauze drain has been put in place the peritoneum is closed over it (Fig. 8). This closes off the

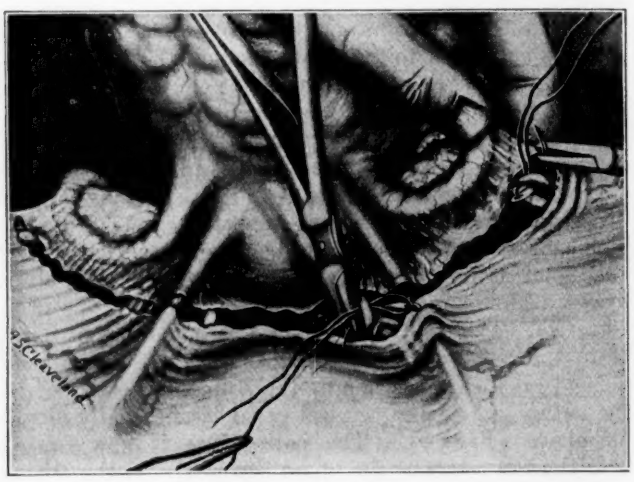

Fig. 2.—Ligating the ovarian and uterine vessels. Each vessel, artery or vein is tied off separately. The peritoneum has been pushed back to expose the vessels before ligating.

peritoneal cavity from the site of operation and precludes the possibility of omental or intestinal adhesions to the stump left from the amputation.

I first used this peritoneal closure with independent drainage below, in cases of hysterectomy for cancer in which injury to the bladder actually occurred or was feared.

By this means in a few hours the general abdominal cavity is shut off from the bladder region, and, should that organ leak from faulty suture or from traumatic necrosis during the operation, the general abdominal cavity is protected from the possibility of urinary infection.

Dudley illustrates a similar procedure but nowhere mentions it in his text, so that I am not certain whether the point was intended. At any rate the procedure is worthy of repetition.

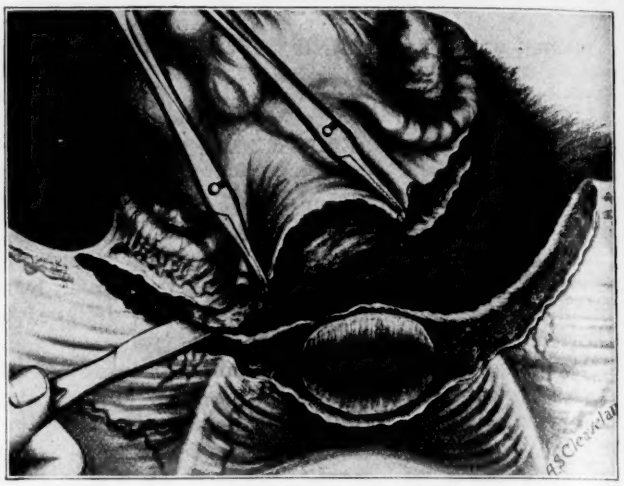

Fig. 3.—After all the vessels are tied off the uterus and the *posterior* layer of the peritoneum are cut across.

ADVANTAGES OF THE OPERATION.

An amputation of the uterus done in this manner follows the general rules ordinarily accepted for all other amputations.[2] Its merit consists in the fact that no clamps are used, hence there is no crushing. Tissue not vascular is not subjected to ligation, therefore there is

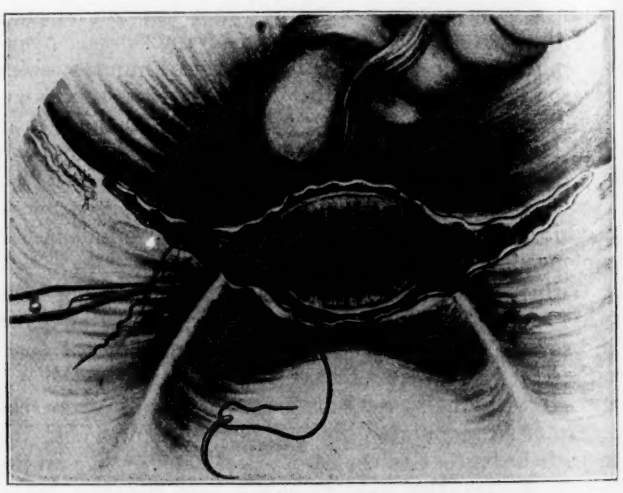

Fig. 4.—Suture placed to close the stump of the cervix.

no tissue to necrose and no nerves are compressed and no raw surfaces are left exposed. The peritoneum is included only in delicate coaptation sutures which hold the layers together without causing pressure, consequently there is a minimum amount of pain.

2. A similar technic is used in salpingo-oöphorectomy. Peritoneal flaps are made and the vessels are ligated separately and the peritoneum closed over the stumps. In ovarian tumors, too, the pedicle is treated in like manner. A cuff of peritoneum is made as in appendicectomy, the vessels ligated and the cuff united over the stump of the vessels with fine sutures.

The objections to this operation are that it is time consuming, that ligatures on the isolated vessels are apt to slip, that such a technic can not be used in all cases, and, finally, that the operator must be an expert anatomist. In my hands the operation requires from forty-five minutes to an hour and a quarter (with twenty-five minutes as a minimum time). I have not seen shock worthy of note follow in any instance.

Whether ligatures are apt to slip or not depends on how they are put on. Ligatures are more apt to slip when tissues of varying contractility are included in a single ligature because the more elastic tissue tends to withdraw itself from the ligature. The cause of a ligature slipping is the faulty application or the use of unsuitable material.

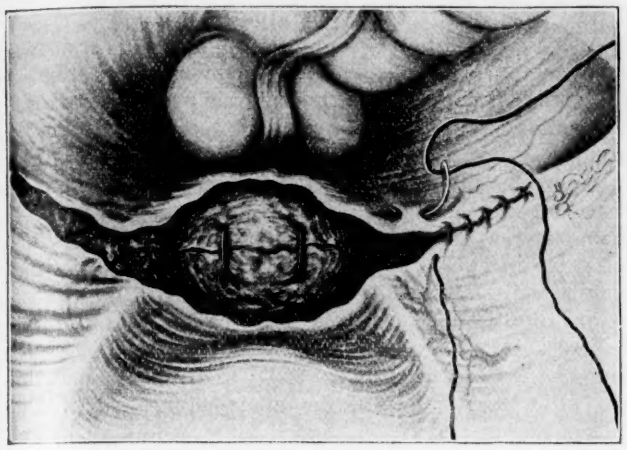

Fig. 5.—Stump of the cervix closed and the peritoneum being sutured.

Hard catgut, chromicized, or dry catgut can not be made to tie securely about a vessel the size of those in question. I prefer Ramsey County or plain catgut previously soaked in water to make it pliable. The use of the surgeon's knot, too, makes it impossible for so small a vessel to be compressed securely, a point which my colleague, Dr. J. N. Jackson, has particularly emphasized. The ligature must be placed under the eye so that the operator may know when the vessel is securely compressed. If these precautions are used mass ligatures, interlocking and backstitching will not be required to satisfy the operator of the security of his work, any more than they are in ligations in the amputation of an extremity.

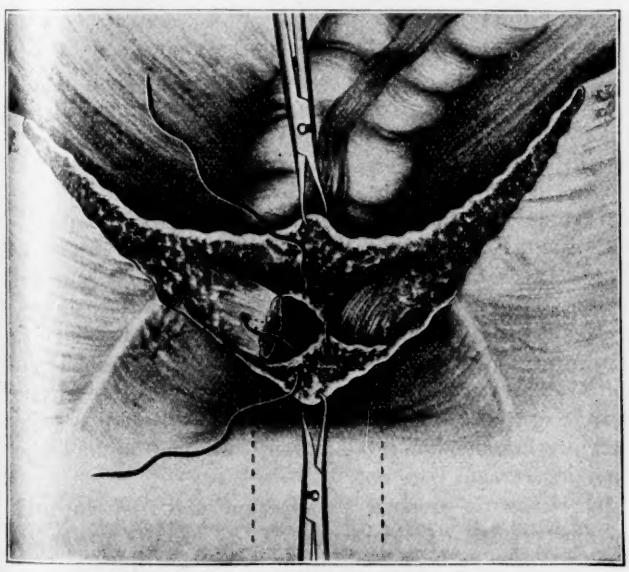

Fig. 6.—Closure of the vagina when the cervix has been removed. The infrauterine ligament is here seen sutured to the upper end of the vagina.

That the operation can not be used in all cases is admitted. In suppurating fibroids and in acute infective processes it is inexpedient. It has been suggested that large fibroids would make its use impossible. My experience has been that in large tumors the vessels are brought nearer the surface and are more readily reached than in smaller tumors.

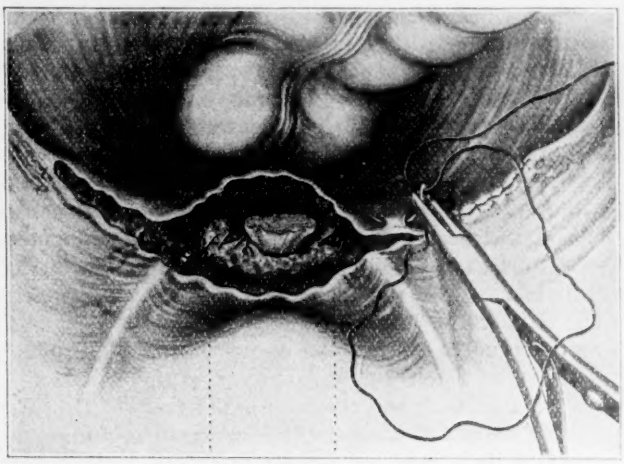

Fig. 7.—Vaginal opening now completely closed; gauze drain inserted to drain peritoneal cavity.

The truth of the last objection I admit: The operator must be secure in his knowledge of the anatomy of the region involved. Without such knowledge neither this, nor indeed any other, operation should be undertaken.

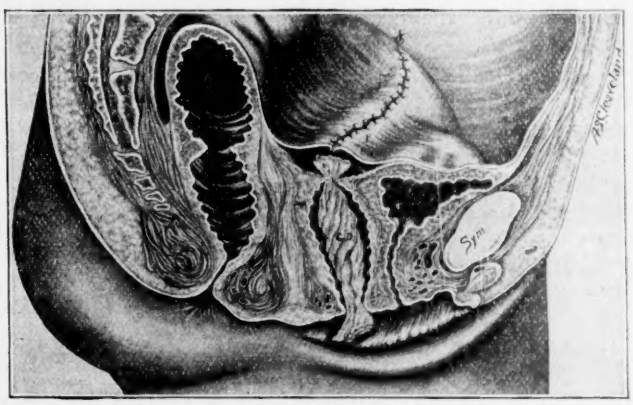

Fig. 8.—Sagittal section of complete hysterectomy. Subperitoneal space drained by gauze (G. D.) into the vagina.

Adjustment of Spectacle Frames for Infants.—Mr. Bishop Harriman (*Brit. Med. Jour.*, Sept. 12, 1908, p. 745) demonstrated in the ophthalmic section of the British Medical Association an ingenious mode of fastening spectacle frames in infants, which he has used for over a year with excellent results. Children require strong frames, while curl sides must necessarily be frail. He used the ordinary straight arms with a loop at the end. A piece of tape, elastic or not, was looped under the nucha, its ends threaded through the eyes of the spectacle bows, then carried on to the vertex, where they are tied together.

LUMBAR PUNCTURE IN DIAGNOSIS AND THERAPEUTICS.

DESCRIPTION OF A DEVICE FOR MANOMETRIC ESTIMATION OF INTRASPINAL PRESSURE.

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Lumbar puncture, as described by Quincke in 1891, has come down to the present time with no essential change in technic, and little elaboration. It is, more and more, taking its place as a practical aid in the diagnosis and treatment of certain well-defined conditions. This paper aims to present some features of the procedure which make it of value to the physician, not only in hospital work, but in private practice, and, in the interest of greater accuracy in making observations, attention will be drawn to a means of making pressure observations in terms of mercury rather than in terms of spinal fluid.

The dangers of lumbar puncture are, with very few exceptions due to carelessness in the matter of surgical cleanliness, so that rigid asepsis removes the element of risk, except in very rare instances. The most frequent source of embarrassment to the operator is to get a "dry puncture" (usually due to a failure to give the needle a sufficiently upward slant), while untoward symptoms on the part of the patient are extremely seldom met. That is to say, transitory symptoms from the effect of altered pressure following the withdrawal of spinal fluid are to be guarded against rather than feared.

Momentary sharp headache or dizziness and fainting sometimes occur. Abducens paralysis of very short duration has been reported in a case in which the needle was introduced and the operation at once stopped on the flow from the needle of a few drops of blood.[1] The few deaths recorded from spinal puncture happened in patients with brain tumor[2] (in one of which hemorrhage occurred in the tumor mass) and in hydrocephalus associated with great pressure. It is my practice to keep the patient, especially if an adult, lying in bed for twenty-four hours after withdrawing any fluid. The fluid should be removed very slowly, and in such amounts that the pressure shall not approach too nearly the normal at the end of the operation in those cases in which the pressure is very high, lest hemorrhage from vasomoter disturbance occur, or too sudden hyperemia of the brain.

If, after withdrawing 2 or 3 c.c., the pressure does not tend to rise slowly, approaching the initial pressure, occlusion of the foramen of Majendie (*apertura medialis ventriculi quarti*) should be suspected and the greatest caution exercised, especially in cases of brain tumor or hydrocephalus. Under no circumstances should aspiration be employed. If the fluid does not flow, Curschmann[3] advises placing ice to the feet. I have noticed that a prolific source of disappointment is the use of a needle without a stylet, whereby, in passing the needle through the tissues, plugging of the lumen takes place. It seems probable that, in the injection of serum into the subdural space, failure to warm it properly to the temperature of the patient's body accounts for the troublesome pain and paresthesias sometimes occurring in the lower part of the body after the injection. In three instances I have encountered hemorrhage undoubtedly due to injury by the needle point of the rich network of spinal veins, but no untoward results followed. Other than the case of Wolff already referred to, there seems to be no record of even temporary symptoms following such hemorrhages.

The most satisfactory apparatus for general purposes is such as is used by Professor Pfaundler.[4] He employs a small mercury manometer attached by a rubber tube to the spinal needle. After taking the pressure reading, the manometer is detached and the fluid flows from the needle. I have modified this by using a device (Fig. 1) that obviates the removal of the manometer. The modification consists in placing between the needle and the manometer a nickelplated, T-shaped tube, with a shut-off valve in two of the arms, by means of which fluid may be withdrawn while the manometer still is in place by opening the valve (Fig. 2, B) in the free arm of the T. Subsequent pressure readings may be made by shutting this outflow valve (Fig. 2, B) and having open the one (Fig. 2, A) toward the manometer. All of the rubber tubing and the T-shaped piece should be boiled as well as the needle. One is then enabled to collect the desired fluid for bacteriologic examination from the outflow arm (Fig. 2, C) without difficulty, to regulate the speed of outflow and to be guided by various manometeric observations of the pressure as to the quantity to be drawn off.

The instrument in common use by which the pressure is read in terms of spinal fluid is a rubber tube 20 to 40 cm. long with an S-shaped glass tube at the distal end and having the proximal end attached to the needle. The glass tube is raised to such a height that the top of the fluid may be seen in it, and the distance of the surface of the fluid above the needle is measured. That this method does not give an accurate estimation of the pressure is evident, for in many instances an indefinite amount of fluid is inadvertently lost, and also because the instrument must contain about 10 c.c. of fluid before it rises in the glass tube, thereby markedly reducing the intraspinal pressure, and making it impossible to estimate the initial pressure, that is, the pressure before any fluid escapes from the subarachnoid space. The normal pressure in millimeters of spinal fluid (or water, its approximate equivalent) is 40 to 150 mm. In mercury it is 10 mm. to 35 mm. But the results of one method can not be expressed in terms of the other by the use of the specific gravity of mercury as a factor, because the mercury manometer gives the initial reading and the other instrument does not.

In estimating pressure the position of the patient and his age require consideration. It is usually easier to have infants and young children in the sitting position. Under these circumstances the spinal pressure varies from 10 mm. to 20 mm. in the former, and from 15 mm. to 35 mm. in older children. On the other hand, adults are under better control in the horizontal position. Two cases will suffice as examples of the change of pressure with posture. In one, sitting, the pressure was 50 mm. of mercury, and lying down fell to 35 mm. In

1. Wolff, H.: Zur Frage der Abducenslähmung nach Lumbalanæsthesie Berl. klin. Wchnschr., 1907, No. 41.
2. Kaupe, W.: Diagnos. und therap. Wert der Spinalpunction, Centralbl f. d. Grenzegeb. d. Med. u. Chir., 1907, ix.
3. Hilfsmittel bei d. Lumbalpunction, Therap. d. Gegenw., August, 1907.
4. Pfaundler and Schlossmann: Handbuch der Kinderheilkunde, I, 186.

the second it was 22 mm. sitting and 17 mm. lying down.

In disease the spinal pressure is highest in inflammatory conditions, especially in tubercular meningitis in the irritative stage, in which it may reach 100 mm. Hg, and in epidemic cerebrospinal meningitis, in which the remarkable pressure of 250 to 300 mm. of mercury is reported as common by Foster.[5] But pressures of 40 mm. to 60 mm. are just as apt to be encountered. One other condition in which excessive pressure may be met is that of chronic internal hydrocephalus, but anything over 60 mm. in children is not recorded. Moderate increase of pressure is found in the other suppurative meningitides, in serous meningitis, in so-called "meningismus," in uremia and sometimes in cerebral tumors.

Normal or subnormal pressure excludes inflammatory processes, unless the heart is weak. But a moderate increase does not exclude the functional neuroses. In a case of cerebellar tumor in the service of Dr. W. I. Terry, at the University of California Hospital, and in which a decompression operation had been done for the relief of symptoms, I endeavored to ascertain the relation between the spinal and intracranial pressure. By passing the needle through the scar the intracranial pressure was found to be 3 mm., while the intraspinal pressure was 10 mm., the patient being in the horizontal position in each case. It is suspected that the pressure

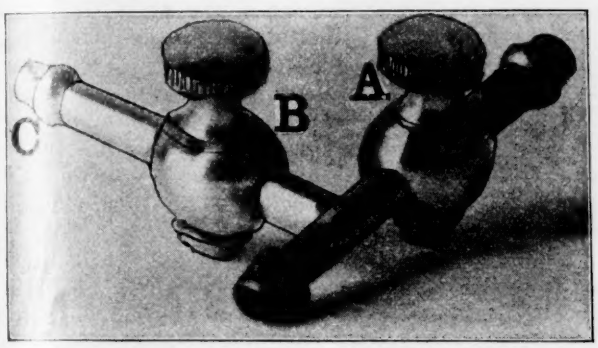

Fig. 1.—Stopcock device that obviates the removal of the manometer when performing spinal puncture. A, stopcock to shut off manometer; B, outflow stopcock; C, outflow.

of the neoplasm at the foramen magnum accounted for the difference.

Observations as to the macroscopic appearance of the spinal fluid are too often neglected. For instance, the clear fluid seen in tubercular meningitis, if set aside in a test tube for at least six hours, will show a very characteristic web-like coagulum suspended from the surface of the fluid. Coagula of a coarser nature form on standing in other inflammatory conditions, and in hemorrhage, either from bleeding into the spinal cavity or fracture of the skull, or hemorrhagic pachymeningitis. In birth traumatisms or sinus thrombosis the fluid may be blood-stained, but it lacks tendency to coagulate. Furthermore the albumin content and the copper reducing substance are useful factors in differentiating inflammatory from non-inflammatory processes. Albumin is normally present as globulin in from 0.02 per cent. to 0.05 per cent. It is not increased in non-inflammatory conditions, except paresis and hemorrhagic lesions, and it is only in suppurative and tubercular meningitis that it has been found to exceed 0.5 per cent.

5. The Etiology and Diagnosis of Epidemic Cerebrospinal Meningitis, Am. Med., January, 1907.

The substance in the spinal fluid which reduces Fehling's solution (sometimes glucose, sometimes pyrocatechin) is absent in inflammations of the meninges and returns as the condition improves. This reaction is valuable in differentiating cerebrospinal rhinorrhea from rhinitis.[6]

Cytodiagnosis of the spinal fluid has in the last few years advanced to a secure position, but the crystallization of medical opinion on this subject is not yet complete. It is established that in suppurative meningitis polynuclear leucocytes appear in large numbers, and in epidemic meningitis also, but in this disease lymphocytes may increase as improvement takes place. In tuberculous meningitis the lymphocytes are usually increased in the fluid in the later stages, the polynuclears in the earlier stages. Cases are reported in which the latter predominate throughout the course of the disease, but, as a rule, when polynuclears outnumber lymphocytes in tuberculous meningitis a mixed infection is present. In 80 per cent. of syphilitic affections of the central nervous system there is a notable increase of lymphocytes in the

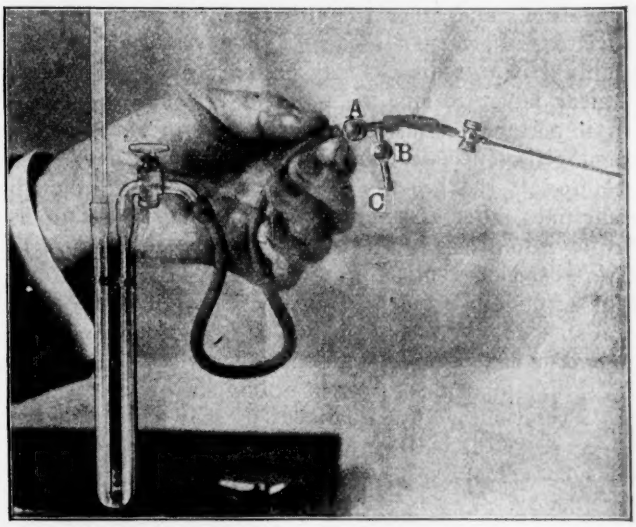

Fig. 2.—Stopcock device connected with Sahli's Pocket Manometer and a spinal needle. A, stopcock to shut off manometer; B, outflow stopcock; C, outflow.

spinal fluid. This holds also in tabes dorsalis and in paresis. In the latter affection albumin may also be increased, but not in tabes nor the other syphilitic conditions.[7]

Examination for the presence of tubercle bacillus, the meningococcus of Weichselbaum, the bacillus of typhoid, diphtheria or influenza and the colon bacillus; the pneumococcus, which is the chief pyogen, the staphylococcus, streptococcus and the *Bacillus pyocyaneus* is not a difficult matter, and since all have been demonstrated in the spinal fluid, and as the prognosis and treatment varies to a great degree with the nature of the exciting agent of cerebrospinal inflammations, the importance of such an examination is evident. Search for the tubercle bacillus is rendered less uncertain, if, after the fluid has been allowed to stand long enough for the characteristic web-like coagulum to form, the coagulum be removed and stained for the bacilli, preferably after being digested with pepsin, although this is not usually necessary. A peculiar phenomenon has been observed in this

6. Kinsman, D. N.: Cerebrospinal Rhinorrhea, THE JOURNAL A. M. A., 1908, l, 1791.
7. Merzbacher, L.: Lumbar Puncture in Diagnosis, Riv. de patol. nerv. e mente., May, 1906, xi.

connection: Frequently, when before death tubercle bacilli were discovered with difficulty or not at all, immediately after death they could be demonstrated in large numbers.[8] In one such case I found so many in the fluid, postmortem, that after decolorization in the usual way the preparation still remained red. The explanation of this may be altered chemotaxis after death, between bacilli and tissues, by which the bacteria are drawn from the tissues into the fluid.

As a therapeutic measure, lumbar puncture is indicated whenever increased intraspinal pressure gives rise to symptoms. At intervals of from one to five days withdrawal of from 5 to 100 c.c. of the fluid may be advisable. With such a procedure five recoveries[9] from tuberculous meningitis are recorded in which the bacilli had been demonstrated in the spinal fluid. In Adam's[10] twenty-one cases of Pfeiffer bacillus infection there were three recoveries in which lumbar puncture was done one to three times. Schlesinger[9] claims that not only under this procedure will comatose children with tuberculous meningitis be restored to consciousness, but also that convulsions and other irritative manifestations may be obviated. It can not be denied, however, that drawing off fluid in this disease may hasten death. In uremia lumbar puncture and the relief of pressure possibly is an important palliative agency,[11] and in acute serous meningitis it usually causes a favorable outcome.[12] In eclampsia[13] the benefits are not striking, and though sometimes relief of symptoms follows, the procedure is falling into disuse in this connection. In chlorosis, with severe headache, spinal pressure is frequently high, and lumbar puncture has been advised. But in any condition amenable to other remedies, such a treatment would be one of last resort. With the exception of the use of antiserum in epidemic cerebrospinal meningitis, which has revolutionized the treatment of that disease in the last few months,[14] the injection of remedial agents into the subarachnoid space has not been demonstrated to be satisfactory. The intradural infusion of tetanus antitoxin first advocated by Blumenthal and Jacob and von Sicaro is now advised against by Romberg, in view of the fact that its subcutaneous use is more encouraging.[15]

2446 Washington Street.

8. Pfaundler and Schlosemann: Handb. d. Kinderh., i, 188.

9. Schlesinger, E.: Der therapeutische und symptomatische Wert der Lumbalpunction bei der tuberculœsen Meningitis der Kinder, Berl. klin. Wchnschr., June 18, 1906.

10. Grip Meningitis, Arch. Pediat., October, 1907.

11. Chauffard, A.: Acute Uremia and Transient Spinal Polynucleosis, Semaine med., Nov. 15, 1907.

12. Riebold, G.: Ueber seröse Meningitis, Deutsch. med. Wchnschr., 1907, xxxii, No. 46.

13. Thies, J.: Ueber Lumbalpunction bei Eklampsia, Zentralbl. f. Gnäk., xxx, No. 18, Pollak, E.: Ueber Lumbalpunction bei Eklampsie, ibid., xxx, No. 31.

14. Flexner, S., and Jobling, J. W.: Serum Treatment of Epidemic Cerebrospinal Meningitis, Jour. Exper. Med., January, 1908. Chase, W. S., and Hunt, M. L.: Serotherapy of Epidemic Cerebrospinal Meningitis, Arch. Int. Med., April, 1908.

15. Hofmann, M.: Serum Treatment of Tetanus, Beitr. z. klin. Chir., October, 1907. Mering, von J.: Lehrbuch der Inneren Medizin., 1907, p. 125.
Russell, A. E.: Urmia, Med. Press and Circ., July 3, 1907.
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THE CORSET FOR MOVABLE KIDNEY AND ASSOCIATED VISCERAL PTOSES.*

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In responding to the request to give heretofore unpublished details of my corset for visceral ptoses, I must ask your indulgence, if, while endeavoring to crowd the results of 15 years' work into as many minutes, much is omitted and reference made to prior publications on this subject.[1] The statements relative to my own work are based on a careful review of 7,266 histories which I have been able to gather from the following sources:

	Females.	Treated for Ptoses.
Northern Dispensary	3,080	16
Roosevelt Hospital Dispensary	2,300	161
West Side German Dispensary	1,559	52
Private records	127	127
Private records, accurately measured	100	100
Total cases considered	7,266	456

Visceral ptoses are met with in both sexes, at nearly all ages, and under all conditions of civilized and uncivilized life, especially in young nulliparæ, and women who have borne children. In a large proportion the lower part of the face presents a deeply furrowed, drawn appearance, making the woman appear much older than she is.[2] The attitude is that of one lacking in muscular force and vigor, shoulders stooping, and a doubled-up way of sitting. In nulliparæ we note the absence of fat, so essential to all grace and beauty of form, the narrow, ugly, unequal hips, long, slender waist, the hollow epigastrium, protuberant hypogastrium, scoliotic back, and disproportion between the length of trunk and legs. (Fig. 1).

Of the several ectopic viscera, the most prominent and easily palpable is the kidney. (1) In many instances productive of no demonstrable symptoms; (2) a prolapsed right kidney, compressed by the corsets or waistbands, manifested by Dietl's crises;[3] (3) intermittent descent of the right kidney, inducing hydronephrosis; (4) slight descent of a chronically congested right kidney, dragging on or compressing the bile ducts, causing acute jaundice;[4] and (5) acute traumatic dislocation of the kidney, most frequently the left, associated with hematuria.[5]

The most frequent and important of the visceral ptoses is that of the stomach and colon—so insidious in development, so detrimental to health, so frequently overlooked, so intractable to treatment, so damaging to other viscera, dragging down the liver, spleen and heart, seriously interfering with respiration and circulation, alimentation, nutrition and excrementition, degrading all mental, moral and physical functions.

Treatment.—Judging from the writings of such men as Byron Robinson, James Israel, J. Chalmers Da Costa and some of the more recent workers, -pexies, -plications and -ostomies frequently fail to fix, fold or drain, and are to be resorted to only as the last resort. In 1901 I

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Am. Jour. Obstet., July, 1901; also Internat. Clin., iv, 14th series, and i, 15th series.
2. Med. Rec., July 27, 1907.
3. Canadian Jour. Med. and Surg., July, 1903.
4. N. Y. Med. Jour., Sept. 14, 1907.
5. N. Y. Med. Jour., April 29, 1905.

maintained that 90 to 95 per cent. of symptomatic movable kidneys can be cured symptomatically by wearing a corset.[1] If it is permissible to judge by subsequent experience and by the number of cases in which fixation has failed to fix or relieve the symptoms, my estimate at this time would be that not more than one per cent. require operation. In all probability there is not one member of this section who has not been harrassed by patients who have tried binders, belts and bandages, without number, and even one or more operations, who come begging for some means of relief.

In order to make clear my position, two questions demand an answer: 1. What are we endeavoring to attain?

The tension and dragging, kinking and obstruction exerted by displaced viscera, can only be relieved by (a) restoring them to their relatively normal relation within the body cavities, and (b) after replacement maintaining them in that position by such means as will be free from injury, and will not interfere with their natural mobility and the performance of their normal functions.

2. How can these objects best be accomplished?

(a) The three most rational and powerful agents at our disposal for visceral replacement are posture, massage and exercise. Under the force of gravity, when a woman lies down, all the organs tend toward the diaphragm, especially if the foot of the bed be elevated, and sooner or later all of the symptoms due to displacement will subside and remain in abeyance, so long as she remains in this posture. In the most severe cases it may be necessary to keep the patient in bed for several weeks, for a regular course of "rest-cure," as carried out by S. Weir Mitchell, before attempting to retain the viscera in position.[6]

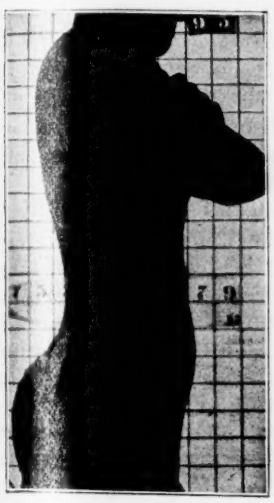

Fig. 1.—Silhouette of nullipara, showing protuberant hypogastrium; hollow epigastrium, small, undersized hips, long waist. Each square = 2 inches.

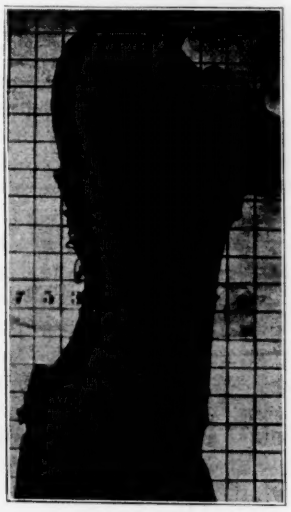

Fig. 2.—Same patient as Fig. 1 with corset on.

(b) While in bed for the "rest-cure," after laparotomy, or during the puerperium, we make use of the "stock" binder[7] to afford support, prevent tension on sutures and as a prophylactic against ptoses after labor.

It was not long after my first experimental use of the ready-made corset for the relief of symptomatic movable kidney as suggested by Edebohls, ere I learned that while a corset laced tightly at the waist-line would readily support a replaceable kidney and would put a stop to such symptoms as were actually due to kidney mobility better than operation, it was quite evident that the more grave and detrimental, chronic, gastrointestinal displacement and symptoms were not relieved, but made decidedly worse, by the indispensable, additional tightening of the corset at the waist-line. In other words, by the use of a corset laced tightly at the waist we were enabled to determine and relieve kidney symptoms, viz., Dietl's crises, hydronephrosis, jaundice and hematuria, but it intensified the gastritis, constipation, malnutrition, etc., of enteroptotic origin.

The Corset.—Many trials with numerous styles of ready-made corsets have demonstrated that the end in view could only be attained by having each corset made to order from measurements of each individual patient, keeping in mind the following essential features:

1. The corset must conform to the latest mode, or fashionable women will not wear it.

2. At the bottom the front steels must overlap the upper half inch of the symphysis pubis; must reach down low and fit very snugly around the hips, stretching very tightly across from one anterior, superior spine to the other, to flatten and reduce the hypogastrium to a minimum.

3. To prevent constriction, the circumference must equal that of the natural waist; at the same time there must be a well marked incurving of the sides, at the waist (a) to support the kidney; (b) to prevent the corset slipping upward, and (c) to afford a fashionable outline to the figure.

Fig. 3.—Same patient as in Fig. 1 with corset on, showing flattening of hypogastrium, fullness of epigastrium.

Fig. 4.—Showing corset laced from the waist down; with loose elastic laced in upper part of the corset, and must not be tightened.

4. At the back and sides the upper portion must accurately fit the thorax, while in front ample room must be provided for the replaced stomach, as any pressure on the epigastrium would induce unbearable pain and discomfort. (Fig. 3).

5. Below the waist the corset must be inelastic, inflexible, that the replaced viscera may not descend after the corset has been put on; yet, on the other hand, all that portion above the waist must permit free play to every motion of the trunk, afford unconfined action to the thoracic walls, and in no ways interfere with the action of the heart and the full expansion of the lungs.

6. For thin women, whose hips are more or less deficient in fat, hair pads must be stitched inside the lower part of the corset to restore the natural rotundity to the figure and overcome the painful pressure exerted

6. Therap. Gaz., July, 1902.
7. THE JOURNAL A. M. A., 1906, xlvii, 1357; also Am. Med., 1904, vii, 783.

by the corset as it passes over the anterior spines and crests.

7. The one lace must be inserted as follows: Beginning at the first eyelet above the waistline, continue down to the bottom of the corset. (Fig. 4). In the upper part of the corset a thin, flat, hat elastic may be loosely inserted and drawn enough to keep the garment in close contact with the thorax. If this elastic lacing is too snugly drawn it will cause epigastric discomfort.

8. While to the eye the corset presents the same appearance as an ordinary garment, when ordered by the profession for therapeutic effects it must be made, fitted and adjusted with the same care and attention to detail as an orthopedic apparatus.

9. In the fit, manner of lacing and the posture when putting on, these corsets differ so radically from the life habit of the woman that she must be taught the "how and why" and encouraged to persevere in what to her will seem an almost impossible task, with the assurance that she will certainly derive untold benefit.

10. Readjustment of the pads may be necessitated by pressure on the anterior spines, behind which the pads should be quite thick, but padding must not at any time be carried over their border, as the added thickness will intensify the pressure and suffering. Soreness over the front of the thigh will diminish as the skin thickens.

Fig. 5.—Stout, long-waisted, middle-aged primipara, with post-operation ventral hernia. Attitude indicates general relaxation.

Fig. 6.—Same patient as in Fig. 5. Corset on after operation for cure of ventral hernia.

Putting on the Corset.—1. Freely loosen the lower lacing; wrap the corset around the body; lie down on the bed; flex the legs to a right angle, and while in this posture massage the abdomen, stroking upward, for ten minutes, thereby assisting the displaced organs in gravitating toward the diaphragm.[8]

2. Draw the corset well down over the hips, and fasten in front, beginning with the lowest hook.

3. Without lowering the hips, draw in the lace at the back as tightly as possible, tying it at the back close to the last eyelet.

4. Do not attempt to pull the corset down after the front has been fastened.

5. Do not lower the hips or stand or sit up until the back lacing is drawn as tightly as it can be worn.

Tests of a properly fitted and adjusted corset are:

1. The front steels must always overlap the upper border of the symphysis; the lower part or suprapubic area must be flattened and fit so snugly that when lying down the fingers can barely be inserted between the corset and the bone.

2. The replaced stomach should be noticably prominent within the upper portion of the corset, and cause a distinct bulging of the epigastrium. (Figs. 3 and 6).

3. On rising, sitting or walking, the corset should not "hitch" upward.

4. The garters play no part other than as supports for the stockings.

Prophylactically the corset has been put on young girls at fourteen, on women after labor to prevent or cure jaundice, hydronephrosis, and ptoses; after operation to prevent or overcome ventral hernia, and to aid in restoring the health and strength of the convalescent.

Inappropriate Cases.—We have not deemed it expedient or wise to permit the wearing of a corset (a) when the kidney is not replaceable above the waist-line; (b) when the stomach is held down below the umbilicus by peritoneal adhesions; nor (c) in the presence of pus tubes or tumor in the pelvis or abdomen. On the other hand, a most intractable case of vomiting of pregnancy lasting to the sixth month was stopped immediately by pelvic packing in the knee-chest posture and the wearing of a corset.

Résumé.—The distinguishing features of my plan in the treatment of visceral ptoses, involving one or several organs are:

1. Gravity replacement in the semiopisthotonos posture, massage, exercises, and rest cure.

2. Support of the replaced organs by a special, made to order corset of fashionable design, "V'ed" in front, fastened by one lace, inserted from the waist down, put on and laced while in the semiopisthotonos posture, and worn at all times, except when lying down.

The absence of belts and buckles, flaps and straps, plates and trusses, air bags and kidney pads, and insecure elastic webbing (except the regulation side garters), the fact that it is a real corset, which, though at first troublesome to adjust, improves her figure, affords just what she needs in the way of real comfort and support, on which her clothes hang gracefully, and as time goes by she becomes more upright in her attitude, displays a sweeter disposition, takes a more optimistic view of life, and can enjoy working, walking and the pleasure of living.

540 Madison Avenue.

ABSTRACT OF DISCUSSION.

DR. JUDSON DALAND, Philadelphia: I know that the ordinary corset unquestionably makes gastroptosis and enteroptosis worse. The object to be attained in the relief of enteroptosis is to elevate the contents of the abdominal cavity. It is extremely important that the patient assume the position indicated in the diagram. When the corset is in position does the *x*-ray demonstrate the replacement of the stomach and transverse colon? Up to the present time I have been unable to find a corset that accomplishes this replacement. Certainly those that we ordinarily see do not do it and we are compelled to rely more particularly on an ordinary belt. Such a belt frequently replaces misplaced viscera, but as Dr. Gallant has pointed out, this makes a vast difference in the woman's wearing apparel. To bring about a restoration of misplaced viscera and to allow a woman to retain the wardrobe already in her possession is an exceedingly difficult thing to do. The prevalence of misplacement of the viscera is extremely great and the treatment by replacement, when properly secured, is extraordinarily satisfactory. In certain cases in which replacement has been impossible, a considerable symptomatic improvement has followed despite this fact.

DR. MARY H. MCLEAN, St. Louis: I have tried Dr. Gallant's method for the last three years with a great deal of success, and whereas I formerly tabooed the corset, in many

8. Internat. Jour. Surg., February, 1903.

cases I now recommend it. In addition to its usefulness in enteroptosis it is valuable after abdominal sections, and especially after drainage cases, in which I ordinarily have used the binder, this corset accomplishes the work much more satisfactorily. The abdominal binder has to be held down by perineal straps, making it very disagreeable in the summer time; while the corset is held down by the garters with much less discomfort.

DR. A. ERNEST GALLANT, New York: The photographs show that with this corset properly adjusted the stomach is in the right position. With my corset the patient would have a straight line to the top of the corset. The thickness of the padding inside the corset is a matter of taste and necessity. If the woman is very thin we make it thick. I always try to secure a graceful figure. If the woman is ten pounds under weight more padding is put in. The special point is to pad enough and to place the padding just behind the anterior superior spine to relieve pressure. Every corset-maker should endeavor to make the corset a work of art as well as scientifically useful.

PHAGOCYTIC IMMUNITY AND THE THERAPEUTIC INJECTION OF DEAD BACTERIA IN ENDOCARDITIS.

A PRELIMINARY REPORT.*

E. C. ROSENOW, M.D.

CHICAGO.

INTRODUCTION.

Our knowledge of the factors which determine the localization of micro-organisms on the endocardium in endocarditis, their maintenance and the means of defense on the part of the host is still obscure.

It is not difficult to understand how the endocardium becomes involved during lobar pneumonia with its pneumococcemia or in septicopyemic conditions due to the streptococcus or staphylococcus. In fact, in these cases this is what we would occasionally expect. The cases of endocarditis, on the other hand, that develop insidiously from no demonstrable source of infection or from an infection which is slight and which run a more chronic and milder course are more difficult to understand.

In fourteen cases of pneumococcus endocarditis of the latter type the pneumococci isolated from the blood before and after death were readily taken up *in vitro* by leucocytes in the patient's normal blood. They possessed no virulence, or very slight, to animals. This observation was made also in a case of staphylococcus endocarditis.

The pneumococci isolated from the blood in lobar penumonia, on the other hand, uniformly resist phagocytosis and possess a correspondingly high grade of virulence to animals.[1]

How do the micro-organisms in endocarditis of this mild type protect themselves in the blood and endocardium and ultimately cause death when they seem to be without virulence, while those in pneumonia with their high grade of virulence are usually destroyed and recovery is the rule? The object of this study was primarily to explain, if possible, the mechanism involved in these and other allied questions and to determine the effect of the therapeutic injections of dead bacteria in endocarditis. A full report of the experiments will appear later.

CONSIDERATION OF CASES.

Clinically the cases are all characterized by a subacute course, and, while they must be regarded as cases of malignant endocarditis in that the patients all succumbed to the infection, they should properly be classed under the group designated in Osler's recent communication as chronic septic endocarditis. All but three occurred in patients between 15 and 29 years of age. The occupation of all was chiefly in doors. Six of each sex were affected. In nine cases the original source of infection could not be determined; in one it seemed to be an attack of tonsillitis; in another the most probable source was pyorrhea alveolaris; while in still another it was an abscess of the alveolus and tooth. The exact duration of the process could not be accurately determined but probably ranged from four to twelve months or more in the different cases. The blood culture was the means of making an early positive diagnosis in almost all of the cases. The making of a correct diagnosis on the clinical grounds in most of the cases was difficult because of the insidious onset, the chronicity, and, most of all, because the acute process was engrafted on an old valvular lesion in seven cases. In three cases this point could not be definitely settled, while in four no definite heart lesion was present. Of the four last mentioned there was a definite source of infection in two, while in the other two there was none. Petechial hemorrhages in the skin, one of the much sought-for signs in endocarditis, occurred late in nearly every one of the cases, long after the blood showed pneumococci. Probably the most constant feature was the development of an anemia of a secondary type. This was most pronounced in the cases which ran a more chronic course. A persistent leucocytosis was present in only four of the cases; the rest showed little or only temporary increase in the number of leucocytes. The leucocytosis was excessively high in the case of peculiar staphylococcus endocarditis, going to 120,000 just before death. Definite chills occurred only rarely and in no case in which chills seemed to mark the onset of the disease. Early the fever was remittent in type. In some patients the temperature was normal for weeks and then showed an afternoon rise for a short period. Later as embolism and petechial hemorrhage occurred the fever took on a septic or intermittent type and was associated with sweats.

Autopsies were obtained in six of the cases. Anatomically the valvular lesions were all characterized by huge vegetative growths on the valves involved. Usually the surfaces of the vegetations were studied with recent small necrotic areas and ulcers. The infarcts found showed no suppuration.

BLOOD CULTURES.

It is an accepted fact that fluid media are more efficacious than solid media in routine blood cultures. All observers have obtained a higher percentage of positive results by this means in pneumonia, typhoid fever and septic processes generally. In endocarditis of the type under consideration, on the other hand, solid agar media have given positive results repeatedly where the cultures in broth and milk remained sterile. For this and for the reason that the latter method is a means of obtaining a knowledge of the number of bacteria circulating in the blood, the importance of making inoculations in both liquid and solid media in all cases in which endocarditis is suspected may be emphasized. Repeated cultures in a number of cases showed that while the bacteriemia is constant, the number of bacteria is never

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*From the Dane Billings Fellowship in Medicine, Rush Medical College and the Memorial Institute for Infectious Diseases, Chicago.

*I wish to express my gratitude, especially to Dr. Billings, in whose service all but three of the cases occurred; to Drs. Sippy, Herrick and C. T. Clark, for one case each, and to Dr. Hektoen for aid in the work.

1. Human Pneumococcal Opsonins and the Antiopsonic substance in Virulent Pneumococci. Jour. Infect. Dis., 1907, p. 285.

very great. The number of colonies varied between 4 and 2,000 per c.c. of blood. The organisms isolated from the blood before and after death are undoubtedly pneumococci in all but one case, which yielded a staphylococcus with certain peculiarities. The pneumococci isolated are quite different from those isolated from the blood in lobar pneumonia. As above stated, they are freely susceptible to phagocytosis when isolated and possess practically no virulence to animals. They grow tightly to the surface of the blood agar and in clumps of broth and in the fibrin clot of the blood culture in broth. The properties were more pronounced in some strains than others, and in one case became more pronounced as time went on. These properties are lost sooner or later on artificial cultivation and on animal inoculations, the organisms then taking on the characteristics of typical pneumococci.

ANIMAL EXPERIMENTS.

The characteristics just mentioned are believed to be environmental modifications and to bear a close relation to the ability of the organisms to produce endocarditis. By inoculations into animals of hugh doses of the organisms before the special characteristics were lost, endocarditis resulted without injury of the valves in case of all of the strains tested (six), endocarditis being produced in sixteen rabbits without injury of the valves. Pericarditis developed in every instance in which the endocardium was involved. This was quite independent of the place of inoculation. The special affinity these organisms had for the endocardium, pericardium and the intima of the blood vessels is striking. Intraperitoneal and usually subcutaneous injections as well cause no lesions in these regions but produce a pericarditis and endocarditis instead, especially when a simultaneous dose is injected intravenously. In order to produce endocarditis it was necessary to inject hugh doses and preferably into different regions of the body. The animals recovered promptly from the immediate effects of the injection. Blood and peritoneal cultures at the end of two or three days were sterile. Later, two or three weeks after the valvular lesion became pronounced, a loss of weight, fever and dyspnea occurred and in some instances a definite heart murmur developed.

After the special characteristics were lost it was no longer possible to produce endocarditis. The experimental production of endocarditis in the past has been considered quite impossible without trauma to the valves. The earlier attempts in this study were failures probably because the organisms were inoculated too long after isolation and injected in too small doses.

THE OPSONIC INDEX AND THE THERAPEUTIC INJECTION OF DEAD BACTERIA.

Early the opsonic index is usually normal or a little above, depending on the presence or absence of extension or accidents, such as thrombosis and embolism. Toward the end it falls far below normal. Four cases showed a rise just before death. The injection of the homologous dead organisms early in these cases was followed in twenty-four and forty-eight hours by a rise in the opsonic index and in the leucocytes; usually there was also a corresponding rise in temperature. Clinically no change for the better or worse could be noticed so long as the index was up and the general condition of the patient good. Later, however, after the patient's condition was poor and the opsonic index far below normal, the rise in leucocytes and opsonic index was associated with a drop in the temperature and a definite improvement in the general condition. The rise in the opsonic index and in the number of leucocytes following the injection of dead bacteria is apparently not associated with the reduction in the bacteria circulating in the blood.

A painstaking study of the method by which the bacteria in these cases seemed to protect themselves against the antibodies of the host may be briefly summarized:

1. By cultivation in the serum and blood of the patient these organisms acquired a resistance to opsonification and phagocytosis instead of an increased susceptibility.

2. They usually grew more rapidly in the patient's serum than in normal serum.

3. While leucocytic normal blood had a marked bacteriolytic effect due to phagocytosis and intraleucocytic destruction, the patient's blood containing the same number of leucocytes, the serum having a high opsonic index, often had no bacteriolytic action. This seemed not wholly due to the lack of phagocytosis but to the inability of the leucocytes to destroy the bacteria after they had been taken up.

CONCLUSIONS.

1. The blood culture in endocarditis is the best means of making an early diagnosis. It should always be made for the identification and study of the infecting organism as well as for prognostic reasons. Barring accidents, the greater the virulence the more grave the prognosis.

2. The therapeutic injection of dead bacteria in endocarditis has very little influence on the course of the disease until late in the course, when there is a temporary improvement following the injections.

3. A very close relation exists between the biologic character of these organisms and their ability to produce endocarditis in the class of cases observed.

4. The organisms isolated, while of practically no virulence to animals and susceptible to phagocytosis on cultivation, appear to immunize themselves against the antibodies produced by the host, and thus to overcome the resistance of the latter.

100 State Street.

PRELIMINARY REPORT OF THE ANESTHESIA COMMISSION OF THE AMERICAN MEDICAL ASSOCIATION.*

At the session of this Section in Atlantic City, in 1906, the then Chairman, Dr. Bevan, made some interesting remarks on the value of nitrous oxid as a general anesthetic, and ventured to predict its more common adoption for major surgical procedures. So much interest was aroused by his statements, that this section resolved to appoint a commission to investigate broadly the subject of the numerous anesthetics, old and new, in order that, after proper deliberation, we might set forth an authoritative estimate of their proper value for the profession. In accordance with that resolution a commission was appointed, which has been engaged for some months on the prescribed problem.

Our task is far from simple. The ground to be covered is wide. The opinions of leading surgeons are often opposed and the anesthetics struggling for recognition are held in varying esteem by responsible persons of

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

divergent views. In consideration of these facts, therefore, we have determined to advance slowly with our task, to weigh carefully the claims of the various anesthetics, to set forth soundly and without prejudice their sundry merits and demerits, and to present in the end a series of recommendations, which we trust may commend themselves to you.

Accordingly, we propose—through ourselves or our successors in this office—to investigate yearly one or two drugs only. As a preliminary to this investigation, we have this year collected papers on a number of anesthetics, their more popular methods of administration, and the claims made for them by their most enthusiastic advocates. These papers, tentative, and lacking our unanimous endorsement, we shall publish in our printed report this year.

CHLOROFORM-ETHER.

The work so far has established certain interesting facts. For example, we find that the old chloroform-ether controversy is still active, in spite of the extensive investigations and elaborate findings of numerous physiologists and committees similar to our own. We are told that the practice of surgeons, in their use of anesthetics, has been but little altered by the above-named scientific investigations—that the users of ether still use that drug invariably—and that the users of chloroform still cling to chloroform. We believe that the actual facts regarding the safety and advantages of these two anesthetics are but little questioned, but we are convinced that the divergence of opinion is due today largely to certain conceptions and misconceptions regarding the methods of their administration.

Most men agree that all anesthetics in the hands of inexpert anesthetists are dangerous, while all agree that all anesthetics, in the hands of experts, and applied to suitable cases, are commonly free from danger. As an academic proposition such a statement is well enough—but unfortunately, when we consider the wide demands of a medical and surgical practice which embraces the whole civilized world, and is conducted mainly by general practitioners of little special training as anesthetists, we are forced to regard primarily the dangers and the disadvantages of general anesthetics when used by the inexpert. The problem is quite different regarding the use of anesthetics by the expert. In our researches and recommendations we shall endeavor to bear in mind these two phases of the ether-chloroform problem—the use of these drugs by the expert and the inexpert.

SPINAL ANESTHESIA.

Within recent years other drugs have been forced to the front, as well as novel methods of employing old drugs. Spinal anesthesia is one of the most important of the new methods. It is gaining constantly a broader and more favorable recognition, as its just claims are being acknowledged, and its limitations are being appreciated. One of our collaborators states: "It is my belief that it (spinal anesthesia) has come to stay and will always, in certain cases, prove safer and more satisfactory than any general anesthetic which we now have. I have used it since 1900 in cases where I have seen a clear contraindication to both chloroform and ether, and I have as yet no occasion whatsoever to regret its use. In all I have used it about 150 times, and have statistics of more than 1000 cases without a death. . . . I believe it is particularly indicated in the surgery of the prostate and the rectum, where it is sometimes desirable to have the cooperation of the patient during certain steps of the operation. In all of my cases the operations have been below the diaphragm. Morton and others report analgesia of the upper extremities, even the tongue, where the agent is thrown into the spinal canal with considerable force. . . . While my experience with cocain sterilized by the fractional method was entirely satisfactory, I have given it up for stovain, on account of theoretical considerations. The latter substance stands a temperature beyond the boiling point, and therefore is free from objections which obtain with cocain. We have had less postoperative nausea and headache with stovain. . . . As to the indications for spinal anesthesia: I consider it safer than general anesthesia, (1) in drunkards; (2) in cases of marked nephritis with accompanying heart lesions I am satisfied that it is safer than either of the general anesthetics usually employed; (3) it certainly has seemed to me better in operations of necessity on diabetic subjects; (4) in marked bronchitis, emphysema probably associated with cardiac lesions, and arteriosclerosis; (5) in hernias, and operations on the prostate and rectum, where it may be desirable to have the patient cough and strain during the operation. The average duration of analgesia has been about one hour and thirty-five minutes. . . . Every patient on whom it (spinal anesthesia) has been used, with the exception of one, a diabetic nearly 80 years of age, whose leg I amputated, recovered. He died many days afterward in the usual way of diabetic coma." We report these views as they embody the convictions of a surgeon of wide experience.

NITROUS OXID.

Nitrous oxid, one of the oldest of general anesthetics, is coming into use for major operations. We are familiar with its employment by dentists and by surgeons for minor operations, as well as with its use to induce anesthesia as a preliminary to ether—but its employment combined with air throughout major operations is still something of a novelty, while its greatest advantage is that it is the safest general anesthetic known.

H. A. Kelly and A. D. Bevan have employed it for operations of the first magnitude, and have shown that the patient can be carried along under its influence comfortably and safely for more than an hour. With Bevan it is the anesthetic for the reduction of fractures and dislocations; for operations on felons; for breaking up adhesions in joints; for draining empyemata and lung abscesses; for exploratory abdominal sections; for operations on the biliary passages; for nephrotomy, nephrectomy and nephrolithotomy; for suprapubic cystotomy for stone, and for suprapubic prostatectomy; for draining an appendiceal abscess; for colostomy, gastrostomy and enterostomy; for the repair of typhoid perforations, and of gastric and duodenal ulcers; for the radical cure of hernia and the relief of strangulated hernia; for hydrocele and varicocele; in castrations; in amputations, except at the largest joints; and for the removal of benign tumors.

This is an important and striking list, and it covers many of those conditions for which one surgeon might choose spinal anesthesia, another local anesthesia, and another one the more familiar general anesthetics. How shall we reconcile divergent views?

LOCAL ANESTHESIA.

Within recent years certain surgeons speaking with authority have urged us to employ local anesthesia in the case of many major operations, and last year J. F. Mitchell, of Washington, read before this Section an important account of his experience with local anesthesia. Your commission have had the advantage of Dr. Mitchell's cooperation in preparing this report. With widening practice and endeavor, he finds the scope of local anesthesia to be surprisingly broad. The method is applicable not only to minor operations, but to all amputations of limbs, to operations on bones, to the exploration of the abdomen, for typhoid perforations, for appendectomy, for all forms of hernia, for all operations on the male genital organs, and for most benign tumors. We shall publish in our complete report Mitchell's brief final statement on this subject of local anesthesia.

RECTAL ANESTHESIA.

Rectal anesthesia by ether, after being tried and abandoned nearly twenty years ago, is now being practiced with success and advantage. The improved technic and good results of Cunningham of Boston and Brewer of New York, show this form of anesthesia to be safer than at first was supposed. In the case of carefully prepared patients and a gradual administration of the anesthetic through a suitable apparatus, good results can be obtained. The method is, of course, an ideal form of anesthesia for all head and neck operations. The method is valueless and dangerous in unskilled hands. Its use implies careful preparation of the rectum, a special apparatus, and a patient, intelligent administration.

In from three to five minutes from the time the etherization is started the odor of ether can be perceived in the patient's breath; in two or three minutes more he becomes drowsy, his eyes close, his breathing becomes tranquil, regular, and slightly stertorous, and he passes into complete anesthesia, usually without excitement or struggling. The time necessary for the production of complete anesthesia by this means varies from six to fifteen minutes, and the condition once established is maintained easily for an indefinite period.

There are numerous special methods of anesthesia suitable for special conditions, for special patients, and for special operations. Freeman Allen of Boston has supplied us with an interesting brief paper on these matters. He deals with brain operations, eye and ear operations, nose and throat operations, resections of the jaws and tongue, the dissection of goiters, of cervical lymph nodes; and with operations on the larynx and esophagus. He discusses the preparation of the patient for inhalation anesthesia. He describes scopolamin-morphin anesthesia, rectal anesthesia, and such special methods as Crile's and Fillebrown's. Allen's paper also will be published in full.

From the brief statements which we have set forth, you will see something of the breadth and of the intricacy of the present-day problem of anesthesia. As we have already stated, it is a striking fact that all the newer methods demand expertness, experience and special apparatus. They appeal especially to surgeons who are equipped with the paraphernalia of expensive and highly specialized clinics. They are little suited to physicians in general practice. For the latter great class of practitioners, the old general anesthetics, chloroform and ether, will probably hold their own until increasing experience has enabled us to simplify and to make safe the newer and more novel methods.

RECOMMENDATIONS.

We submit three recommendations regarding general anesthetics:

1. That for the general practitioner, and for all anesthetists not specially skilled, ether must be the anesthetic of choice—ether administered by the open or the drop method.
2. That the use of chloroform, particularly for the operations of minor surgery, be discouraged, unless it be given by an expert.
3. That the training of skilled anesthetists be encouraged; and that undergraduate students be more generally instructed in the use of anesthetics.

We believe that the further use of nitrous oxid, combined with air or oxygen, in major surgical operations, is promising.

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*METHODS OF ADMINISTERING ETHER.**

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Statistics regarding the death rate of anesthetic agents, although open to grave fallacies, show that ether is by far the safest general anesthetic we have, with the exception of nitrous oxid. In reviewing the statistics, it is a noticeable fact that the death rate, both immediate and late, under the more experienced anesthetics, is so much lower than in the hands of those not skilled in this line of work, that it would seem that deaths are due more to faulty administration, or the selection of the anesthetic unsuited to the case, rather than to the anesthetic itself.

The most reliable statistics from all parts of the world give an average of one death to about every sixteen thousand administrations of ether. Dr. Julliard, of Geneva, reports from various reliable sources 314,738 administrations of ether with twenty-one deaths, or a death rate of one in 14,987. Dr. Ormsby, of Dublin, reports 92,815 ether administrations with but four deaths, or one in 23,204. Professor Tripier reports 6,500 cases without a death, and Alice McGraw 15,000 personal cases without a death. Dr. Rabatz reports 150,000 cases of ether administrations without a death.

PRIMARY CAUSES OF DEATH.

Turnbull reviews the literature (1888-1895) of eleven cases of death from ether. Death occurred in less than one minute after the administration was begun in three cases, and within the first few minutes in four of the other cases. One patient died "during the operation," and one at the end of one and one-half hours. The time of death of the other two patients is not recorded. It appears that most deaths from ether occur during the stage of excitement or before complete

*The following papers by Drs. Cunningham and Andersson, Haggard, Mitchell and Allen were prepared with the cooperation and under the direction of the Anesthesia Commission. They are papers which embody the results of recent research, and are published by the commission for the matters of exceptional interest which they contain. The paper by Dr. Hamburger and Dr. Ewing was prepared in connection with the interesting clinical work of Dr. A. D. Bevan, and is courteously contributed by the authors.

narcosis is established, and is probably due to functional disturbances of reflex origin. In deaths from ether it rarely happens that cardiac failure precedes respiratory failure. The deaths that occur during the surgical stage of anesthesia appear to be due to anesthetic shock.

METHODS OF ADMINISTRATION OF ETHER: CLOSED METHOD.

This is obtained by fitting a closed cone closely to the face, or by the use of inhalers provided with pliable bags for the purpose of rebreathing. The more flexible the material of which the cone is made the more it will permit of rebreathing.

Advantages.—1. The rebreathing gives a much quicker narcosis.

2. Only a small amount of refrigeration because of the retention of the warm exhaled air.

3. A good diffusion of ether vapor and air, therefore less irritation and less chance of a hypersecretion of mucus.

4. A small amount of ether is necessary because of the rebreathing.

Disadvantages.—1. The rebreathing causes a decreased oxygenation, which predisposes to toxic effects of the anesthetic agent. It also gives a respiration greatly increased in carbon dioxid, and produces toxic effects from the organic materials of expired air.

2. It is impossible to regulate the dosage (even approximately) because of the necessity of pouring the ether into the cone or inhaler intermittently. This uneven administration permits of the possibility of exceeding the safety margin and also predisposes to anesthetic shock.

3. The method is very disagreeable to the patient because of a feeling of impending suffocation in the first stage, which often causes extreme fright and struggling.

OPEN METHOD (DROP METHOD).

The open method consists in the use of a small metal frame-work covered with gauze on which the ether is continuously administered by drops.

Advantages.—1. There is little or no rebreathing which permits of the normal oxygenation, no increase of carbon dioxid or poisoning from exhaled organic substances.

2. It permits of the administration of a safe and fairly uniform ether vapor.

3. The induction period with low vapor strength does not produce a feeling of suffocation, and induces anesthesia with a minimum of distress to the patient.

4. The full oxygenation of this method is conducive to complete muscular relaxation and prevents exaggerated abdominal breathing.

5. Its simplicity and adaptability for the inexperienced anesthetist.

6. Its safety has been demonstrated by extensive usage.

Disadvantages.—1. Produces great refrigeration. Whatever heat is taken from the inspired air by the vaporization of the ether is in turn taken from the lungs, as the exhalation is always at practically body temperature, regardless of the temperature of the inhalation. Experiments have demonstrated that a room at 80 F., 2.1 per cent. ether vapor reduces the inhalations to 30 F., and 5.4 per cent. ether vapor to 9 F., thus causing a loss of about 21,000 calories of body heat for every ounce of ether used. If refrigeration is a factor in the production of post-anesthetic pulmonary complications, the open or drop method, which is the most efficient of all methods in extracting heat from the patient, would seem to invite the occurrence of post-anesthetic pulmonary involvement. If refrigeration adds to shock, the open or drop method would, regarding the production of shock, head the list of all the methods of administering ether.

2. Incomplete diffusion of ether vapor and air because of the close proximity of the application of the liquid ether to the face.

3. Unduly large amounts of ether required because of the waste of ether from its vaporization by the exhalation.

4. Room may become saturated with ether vapor during long anesthesias.

5. Longer time necessary to induce anesthesia.

SEMI-OPEN METHOD.

This is obtained by a modification of either of the preceding methods so that the air supply may be controlled, thus causing a limited amount of rebreathing. The appliances used are usually:

1. The mask as used in the open or drop method, with additional layers of gauze or gauze surrounded by towels.

2. A cone containing gauze with both ends open.

3. Any one of the several inhalers (Ormsby's, Braine's and others) with mechanical devices for limiting the air supply.

The semi-open method partakes of the advantages or disadvantages of the two preceding methods to the degree that it approaches one or the other.

MECHANICAL ADMINISTRATION.

Another method of administering ether is by means of an apparatus (Cunningham's) by which the strength of the ether vapor is controlled mechanically by definite percentage, thus giving an even measured dosage. Excessive refrigeration of the inhalation is prevented by means of radiation from a chamber of warm water. But little ether is used because the exhalation does not come in contact with the ether. The inhaler is small so that there is little or no rebreathing. The apparatus has the advantage of simplicity, and the passage of the inhalation through the apparatus gives a thorough mixture of air and ether vapor.

RECTAL ETHERIZATION.

Various apparatus have been used for rectal etherization, some of which have met with fair success.

Advantages.—1. Postoperative nausea and vomiting has been practically absent with this method, and recovery is rapid.

2. Is well suited for operations on the nose and mouth because the anesthetic materials are out of the way.

3. It is well suited in cases of extreme pulmonary or bronchial involvement.

4. A small amount of ether is used.

5. It is not disagreeable to the patient. There is little or no stage of excitement.

Disadvantages.—1. The induction is unusually long.

2. It fails to produce anesthesia in some cases.

3. It is difficult to regulate the dosage.

4. Colicky pains, diarrhea and painful distention of the intestines sometimes follow this method of etherization. This method has had some fatalities, although it has been used without a fatality in a series of 15,000 cases

NITROUS OXID—ETHER SEQUENCE METHOD.

This is obtained by several different apparatus (Clover's, Hewitt's, Bennett's Pedersen's and others), by which nitrous oxid is given until narcosis is obtained, then followed by ether vapor and nitrous oxid, then continued with ether vapor and air. It is necessary for the gas-ether apparatus to employ the aid of anoxemia by the use of a rebreathing bag to maintain a narcosis between the discontinuance of the gas and until the state of complete etherization is obtained. It is necessary to discontinue the administration of the gas early because of the asphyxiation which would follow otherwise.

Advantages.—1. Since narcosis is produced first by gas, the odor of the ether and distress of the induction period is abrogated. Thirty seconds is usually sufficient to produce nitrous oxid narcosis.

2. Surgical ether anesthesia is obtained in from two and one-half to four minutes.

3. Statistics show that the gas-ether sequence is much safer than the administration of ether alone. This is probably due to the elimination of the stage of excitement which is the most dangerous stage of anesthesia.

4. A small amount of ether is necessary to continue anesthesia because of the rebreathing of this method.

Disadvantages.—1. It requires considerable skill for its administration.

2. The cyanosis from the gas and the clonic spasms which sometimes follow is, perhaps, free from danger, but is frightening to those unaccustomed to its use.

3. The rebreathing is objectionable for reasons stated before.

4. It is necessary to give a very strong ether vapor early to prevent a return of consciousness after the effects of the gas and rebreathing are gone. This sudden change to a strong administration of ether vapor often causes laryngeal spasm.

NITROUS OXID-OXYGEN-ETHER SEQUENCE METHOD.

This is also obtained by means of special apparatus (Gwathmey's, Cunningham's). No rebreathing is used. Anesthesia is begun by the administration of nitrous oxid mixed with oxygen in amounts varying from 5 to 15 per cent., according to the depth of anesthesia, the type and condition of the patient. As soon as consciousness is lost ether in gradually increasing amounts is given with the gas and oxygen. When complete ether narcosis is obtained (three to five minutes) the gas and oxygen is discontinued and air substituted.

Advantages.—1. The nitrous oxid, oxygen-ether method has the advantages of abrogated induction period and the quick surgical anesthesia, the same as the nitrous oxid-ether method.

2. The oxygen mixed with the nitrous oxid prevents cyanosis, muscular rigidity, clonic spasms and other symptoms of asphyxiation, without destroying the anesthetic properties of nitrous oxid.

3. By mixing oxygen in the proper proportions with nitrous oxid, complete narcosis can be maintained indefinitely, and is used sufficiently long to permit complete ether narcosis to be established. Since the nitrous oxid and oxygen are continued until complete etherization, there is then no return of the reflexes when air is substituted, and consequently no swallowing of the ether laden secretions. This prevention of swallowing eliminates a great factor in the production of post-anesthetic nausea and vomiting.

4. This longer administration of nitrous oxid and oxygen permits of a gradually increased and dilute administration of ether, which tends not to excite a hypersecretion of mucus. Also, the patient is at no time overwhelmed with ether, as with the gas-ether method.

5. Nitrous oxid-oxygen-ether apparatus provides for the use of oxygen with the ether, if a condition arises which demands it. Oxygen administered with ether will quickly stop a clonic spasm without decreasing the amount of ether being used. This can not be done with air. Oxygen administered with ether gives a better narcosis and more perfect relaxation. It is often of decided advantage in patients of feeble vitality. The blood can safely take up much more ether if it is in a condition of hyperoxygenation.

6. The fact that no deaths have been reported from the use of this method speaks well for its safety.

Disadvantages.—1. The initial cost of this apparatus is considerable. Its use is somewhat more expensive than the gas-ether or closed methods; it is considerably less, however, than the open method.

2. The portability of apparatus for this method is less convenient.

3. Considerable skill is necessary for its use.

CONCLUSIONS.

The drop method is a very popular one. It is practically safe, while its simplicity makes it the method of choice for the inexperienced. Its shortcomings of perfection have been noted and they are sufficiently important to demand consideration. Modern anesthesia has already reached the stage where refinements of methods are necessary, when skilled anesthetists are available. That a method possesses no serious obstacles is not enough. Modern surgeons and anesthetists demand a method of administering ether which overcomes certain minor and too often neglected objections, which are of more or less importance regarding the safety and pleasantness of ether anesthesia.

It may be ventured that hereafter general anesthesia will not be considered as a whole, but its various stages dealt with according to their obviously different requirements, and that this is to be accomplished by sequences of various anesthetics administered with an apparatus which is both accurate and practical, and by men whose entire time is given to this branch of the profession.

NITROUS OXID ANESTHESIA.

WILLIAM D. HAGGARD, M.D.
NASHVILLE, TENN.

Surgeons commonly agree that nitrous oxid is the safest general anesthetic known. Bevan estimates the death rate to be one in fifty thousand. Hewitt was able to collect records of seventeen deaths only from 1860 to 1900.

Ethyl chlorid has produced already thirty deaths in Great Britain alone.

Nitrous oxid is used by dentists, who employ it with great facility for the extraction of teeth. Thomas, of Philadelphia, has administered it 271,940 times with only one death, which occurred five hours after the administration, and was due to apoplexy. This case is included in Hewitt's report of seventeen fatalities.

Nitrous oxid has also been employed rather extensively to induce the anesthesia which is maintained later with ether. This method contributes greatly to the comfort of the patient in avoiding the disagreeable sensations of

"going under" ether. The Bennett gas-ether inhaler popularized the method, but the plan has not yet come into general use in America. It requires from one to four minutes only for complete anesthesia.

Nitrous oxid is undoubtedly a pleasant, safe and simple anesthetic for use in short minor operations, and were it not for the necessary apparatus it would enjoy a larger field of usefulness among surgeons. Aside from its use in very minor operations, such as slitting up sinuses, removing sutures, opening felons, abscesses and the like, Bevan has recommended that it be employed in short major operations.

Nitrous oxid is prepared commercially in a liquid state under high pressure in steel cylinders. When liberated for administration it is converted into a gaseous form. Each cylinder contains one hundred gallons of the gas, which should be kept in a cool place, because a high temperature causes it to explode. It can be obtained in two hundred and fifty and five hundred gallon cylinders also.

Nitrous oxid was discovered by Priestly in 1772, and its anesthetic properties were first satisfactorily demonstrated by Horace Wells in 1844. In 1868 Edmund Andrews, of Chicago, used it in several cases; he mixed it with air and obtained a longer and more satisfactory form of anesthesia than by nitrous oxid alone.[1]

The anesthesia obtained is not dependent on asphyxia; the gas possesses true and intrinsic anesthetic properties. It is irrespirable beyond a certain point. The surgeon who uses it should wait for stertorous breathing, but stop the administration of the gas when asphyxia appears. Anesthesia is induced in from 50 to 120 seconds, when, unless air is administered, symptoms of asphyxia appear.

The signs of nitrous oxid anesthesia are:

1. Quick, deep and stertorous respiration, slightly irregular.
2. Increased pulse rate.
3. Dilatation of the pupil.
4. Absence of eye reflexes.
5. Fixed eye balls.

The symptoms due to asphyxia are:

1. Cyanosis in varying degrees.
2. Jactitation (from anoxemia).
3. Clonic movements of the extremities.

If but little gas is administered these signs will be less prompt, and a stage of excitement will be marked by rapid movements of the limbs, and a mild talking delirium will supervene, from which circumstance the name of "laughing gas" was applied to the anesthetic. When proportionately too much gas is given, respiration is irregular, quick, and stertorous, the eyeballs are turned upward, with the lids widely open, and the pupils dilated. Cyanosis is then extreme, the pulse thready and rapid. Continuation of this condition, with exclusion of air, causes respiratory failure from muscular spasm, although the heart continues to beat. If the patient stops breathing, a gag should be inserted in his mouth, the tongue drawn forward, and artificial respiration should be done.

Recovery ensues usually in from twenty to sixty seconds after the discontinuance of administration of the gas, and the patient at once becomes conscious. There may be a slight headache and dizziness for a short time, but there is little or no postanesthetic nausea or vomiting. The actual period of anesthesia with a single administration of the gas lasts on an average for thirty seconds only. If, however, air or oxygen be mixed with the gas, or be given alternately with it, the anesthesia can be prolonged indefinitely. The asphyxial discoloration, jerking, and noisy respiration may be prevented almost entirely by the careful employment of this measure.

Claude Lyons gave nitrous oxid mixed with 15 per cent. of oxygen to a dog for three consecutive days. Fifteen minutes after the discontinuation of the anesthesia the animal began to move, was able to stand and walk, obeyed commands after thirty-five minutes, and on the next day was well and hungry. Hewitt found that in sixty consecutive administrations of nitrous oxid the average number of respirations required to produce anesthesia was 29.10. The lowest number was six, and the highest seventy-two.

The time required to produce complete anesthesia is on an average about fifty-six seconds. This is a much lighter anesthesia than chloroform or ether anesthesia, and the patients are not so tranquil or so obliviously unconscious. The advent of stertor, and the slight clonic muscular twitching indicate the beginning of complete anesthesia. The surgeon may begin to operate when stertor occurs. If he begins sooner and while the patient is in an imperfect state of unconsciousness, there may be a great deal of spasm and jerking. The operation should be discontinued if there is marked weakness of the pulse or respiration, or if there be vomiting.

The statement is made that no case of primary failure of the circulation has been observed with the use of nitrous oxid, but in every recorded case of nitrous oxid death there has been marked disturbance of respiration.

The feasibility and efficacy of nitrous oxid anesthesia carried on for some time is of great interest to the surgeon. Kelly[2] has removed the appendix several times "under gas," and reports one case of chronic nephritis, with albumin, of thirty years duration, for which he operated with the use of nitrous oxid. The operation lasted one hour and six minutes with complete unconsciousness of the patient. The issue was successful, and there was no untoward effect, except that the patient slept almost continuously for the first week subsequently.

There have been no deaths reported from the administration of nitrous oxid and oxygen. In favorable subjects normal sleep is closely imitated.

There are many forms of apparatus by which nitrous oxid can be administrated with air or oxygen. Bennett's gas inhaler, Hewitt's apparatus, Herbert Paterson's in England, and those manufactured by Clark, of Chicago, and by the S. S. White Dental Company, are the ones usually employed. Directions for the employment of each accompany the apparatus. It is best to administer the gas and air at first concurrently, rather than alternately. Hewitt states that 14 to 18 per cent. of air is the most suitable mixture for men, and 18 to 22 per cent. of air for women and children. With over 30 per cent. of air anesthesia can not be produced. As a matter of actual experience, the question is simply one of keeping the patient sufficiently anesthetized with enough air to prevent asphyxia. A moderately snoring, regular respiration, with slight duskiness of the countenance must be maintained. The air can be administered with

1. Brit. Jour. Dent. Sc., 1869, p. 22.

2. Diseases of the Vermiform Appendix, p. 517.

the gas or one may change to pure gas as occasion demands.

The occasional endeavor has been made in this country during the last third of a century to use nitrous oxid in surgical operations, but the profession have not gotten further than to employ it in short operations requiring from one to ten minutes, for those cases in which ether or chloroform are contraindicated. Bevan[3] urged its employment on account of its greater safety, absence from unpleasant symptoms, the little or no resulting nausea, and for its rapidity of action. He claims that it is the anesthetic of choice for the reduction of fractures and dislocations; for the opening of felons; for breaking up adhesions in joints; for draining empyemas and lung abscesses; for exploratory laparotomies and gall bladder work; for nephrotomy, nephrectomy, and nephrolithotomy; for bladder work such as suprapubic cystotomy for stone, and suprapubic prostatectomy; for draining appendiceal abscesses; for colostomy, gastrostomy, and enterostomy; for the repair of typhoid perforations and for gastric and duodenal ulcers; in hernia operations, especially for the relief of strangulated hernia, for varicocele, and open operations for hydrocele; in castrations; in amputations, except at the largest joints; and in removing such growths as fatty tumors. It was used seventy-seven times at the Presbyterian Hospital in Chicago from Oct. 1, 1907, to May 1, 1908, as against 214 ether administrations. He says further that it can not well be employed in operations on the perineum, such as for hemorrhoids, because when so anesthetized the patient has a tendency to straighten out his limbs. When there is complete muscular relaxation, the surgeon must view calmly the livid color of the patient's face, the dark blood in the wound, and the occasional talking and moving of the patient.

Nitrous oxid can be employed in operations lasting for from thirty minutes to an hour, and has been administered for as long as two hours. It can be employed with advantage in about one-third of all our surgical work. It should be given with the patient in the position requisite for the operation, i.e., Sims, lithotomy, etc., after the field of operation has been prepared and everything has been made ready for the incision. If the patient has a heavy beard, the oval under the facepiece of the inhaler should be covered with several layers of moist gauze, that the mask may fit closely enough to exclude air at that point.

The advantages of nitrous oxid as an anesthetic are:

1. Quickness of action.
2. Absence of uncomfortable sensations to the patient.
3. Almost immediate recovery.
4. Absence of lung complications.
5. Absence of danger to the kidneys.
6. Abscess of postanesthetic vomiting.
7. Improbability of subsequent fatty degeneration of the kidneys, liver and heart. It is to be preferred especially when there is a disease of those three great organs, and for the patients who have previously had unpleasant experiences with the other anesthetics—such experiences as aggravated postoperative vomiting.

Nitrous oxid should be administered by an expert anesthetist only.

The disadvantages of nitrous oxid as an anesthetic are:

1. It is not suitable for fat, plethoric and alcoholic patients.
2. Its zone of anesthesia is within somewhat narrow limits.
3. Slight lividity and occasional talking occur.
4. We can not always secure the requisite skill for its successful administration, nor the required quantity of gas, and the proper apparatus.
5. The cost is not inconsiderable.

From one to two cylinders of one hundred gallons each are needed for an hour's administration.

Contraindications for its use are:

1. It should not be employed for patients with dilated hearts or for those with extremely bad hearts, whether with valvular or myocardial disease.
2. It is not suitable for young children on account of their fear of the mask, etc.
3. It should not be used in case of narrow or abnormal air passages, of enlarged lymph nodes, goiters, or enlarged tonsils and adenoids.

I have employed nitrous oxid with air as an anesthetic twenty-six times from May 15 to August 15. The list of operations comprises minor operations lasting from four to fifteen minutes, and in three major operations: recurrent appendicitis, a 40-pound ovarian cyst, and a suprapubic cystotomy for stone in a man 80 years of age. The duration of the anesthesia in these three cases was ten, fourteen and twenty-five minutes, respectively. The induction is painless and prompt, the recovery almost synchronous with the withdrawal of the mask. The patients leave the operating room, conscious, and in smiling contrast to the narcosis of other general anesthetics.

3. THE JOURNAL A. M. A., 1907, xlix, 197.

CHLOROFORM ANESTHESIA.

WILLIAM D. HAGGARD, M.D.

NASHVILLE, TENN.

Since the introduction of chloroform by Sir James Y. Simpson, in 1864, it has remained one of the most important anesthetics. Following the historic death of Hannah Greer, there have been many other deaths which indicate the danger of this drug. It is still, however, the anesthetic of choice in Scotland, in parts of England, and on the continent of Europe. For general surgical practice, however, the experience of the last fifty years has shown ether to be much safer, and it is the routine anesthetic employed by surgeons in America. Chloroform, unfortunately, is still used by many for minor surgical work, because of its ease of administration and its rapid action. Healthy obstetric patients take choloroform in small quantities and intermittently with safety, and this fact has begotten an impression that it is safe also in continuous administration for surgical operations, undertaken for the cure of pathologic conditions. Unfortunately, the majority of anesthetics are given by persons who are not skilled anesthetists. Indeed, Hewitt says that the risks of general anesthesia are neither in the patient nor in the anesthetic, but in the anesthetist. This is an important fact in the problem of anesthesia. Deaths from chloroform are from simple over-dosage, in the great majority of instances. Chloroform is so insidious, it acts so rapidly, and kills so quickly in the very beginning of its administration, that there is little time for the patient's resuscitation. Ether being slow in its action and in the production of dangerous symptoms gives ample opportunity for their recognition and for efforts at resuscitation.

Out of the whole chloroform and ether controversy there comes the knowledge that for general work ether is approximately five times as safe as chloroform. Even if chloroform, in the hands of an expert, can be rendered free from many of its dangers, ether can be rendered more safe by scientific administration. There are some conditions, however, in which we recommend chloroform on account of its special properties:

1. In the treatment of certain convulsive seizures.
2. In obstetrical practice.
3. In the presence of kidney lesions.
4. In elderly persons, with dyspnea.
5. In operations on the brain it is preferred by some experienced surgeons.
6. In obstructed conditions of the trachea, esophagus, and larynx.
7. In deep cellulitis of the neck.

Chloroform is particularly to be avoided:

1. In all conditions of heart weakness.
2. In all operations requiring the semi-recumbent or sitting posture, particularly in operations of a dental nature.
3. In minor surgical operations.

Physiology.—Chloroform is taken up mainly by the red blood corpuscles, and is said by Moore and Roaf[1] to form unstable and dissociable compounds with the protoplasm of the blood and tissues.

1. It is a cardiac depressant acting on the inhibitory mechanism of the heart and producing syncope from dilatation of the capillaries through the vasomotor system.

In fatal syncope the dilatation of the capillaries is so marked that a large proportion of the blood leaves the brain and great organs, and the patient is bled to death in his own capillaries. Chloroform inhibits the heart muscle also through the coronary arteries.

It has been proved that when a diluted concentration of chloroform is allowed to perfuse the tissues of an isolated heart, the contractions of that organ will be diminished, and that when the concentration of chloroform is great, the heart stops. Sherrington and Sowton[2] have shown through animal experimentation, when the heart beat is pressed to extinction by chloroform, that after one-half hour the beat can be re-established in a few seconds by allowing fresh blood instead of the chloroform-laden fluid to flow through the coronary vessels.

The prolonged action of chloroform-laden blood results in paralysis of the respiratory center. Indeed, failure of respiration has usually been assigned as the first danger of chloroform, and, second, failure of the heart.

2. Cases in which cardiac failure apparently occurred first, as manifested by cyanosis while gasping still continued, have been reported. Sir Lauder Brunton thinks respiratory paralysis occurs first, and the Hyderabad Commission reported that respiratory shock seemed to be primary, and cardiac paralysis secondary. Much controversy has arisen among physiologists over this point, and many facts adduced show that the failure of the heart is the real danger, while Hewitt thinks that the modern consensus of opinion establishes the heart paralysis as the chief event. In all cases there is a considerable fall in the blood pressure.

Death is stated to occur from vagus excitability (Embley). This is illustrated in the so-called "fright syncope," which sometimes occurs when the first operative incision is made before the patient is completely unconscious. We conclude that all of the accidents of chloroform are due to over-dosage. That this is so is shown by laboratory experiments. It is a notorious fact that clinically the majority of deaths from chloroform occur in the early stages of anesthesia, and after a "few drops have been sprinkled on the cloth." Such deaths usually occur in the first or so-called stage of excitement. During the struggles of the patient he holds his breath, the pulmonary blood pressure is consequently raised, and the venous system is congested. If the anesthetist continues the administration in an effort to "get the patient under," suddenly a deep inspiration carries a densely concentrated vapor to the lungs. Blood loaded with chloroform enters the coronary arteries and causes instantaneous paralysis of the heart muscle. This explains the sudden deaths. A semi-recumbent or upright position facilitates this action of chloroform, and has doubtless contributed to the chloroform deaths that have occurred in dentists' chairs.

The only accidental chloroform death of an animal which occurred in Professor Waller's laboratory[3] took

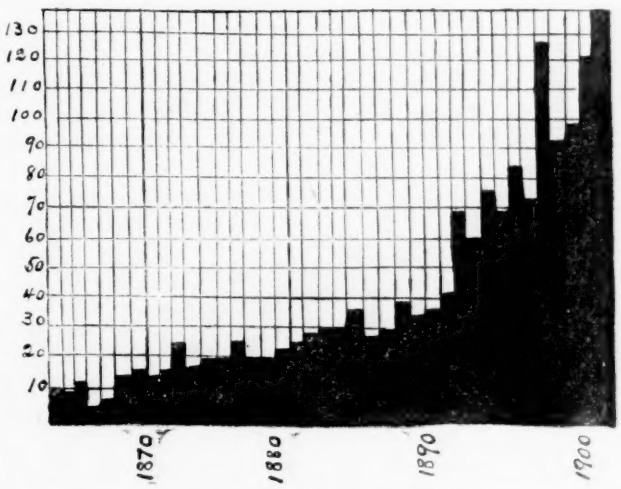

Diagram of the annual number of deaths from anesthetics in England in the years 1863 to 1901. Constructed from the returns of the Registrar-General. From the London *Lancet*.

place when, the animal being anesthetized and ready for the experiment, the operator was called away for a more urgent matter. The animal began to come out from the anesthesia, and was re-anesthetized by a few drops of chloroform on a cloth, which caused a sudden arrest of the heart and respiration. Artificial respiration failed to restore it. This incident corresponds with the experience so dreaded by the surgeon.

Advantage was taken of the accident. By the aid of a densimeter the procedure was imitated with another dog, the experimenter using the same piece of cloth with chloroform sprinkled on it in about the same quantity, wrapped around the animal's head, as when its fellow was fatally anesthetized. The percentage of chloroform vapor in the fatal case was found to be 11.2. The second and harmless trial with the cloth showed a percentage of 2.4.

A third experiment, in which the cloth was held away a considerable distance, gave a percentage of 1.2; so that it was demonstrated that the Edinburgh method

1. Proc. Roy. Soc., lxxiii, 382.
2. Id., lxxii, 86.
3. Lancet, Lond., 1903, p. 1484.

of "plenty of chloroform with plenty of air" is safe, because the mask is held so far from the patient's face that practically only a 2 per cent. vapor is inhaled. A closely fitting mask, therefore, should not be used, even if the drug is given only drop by drop.

Preparation.—The preparation for the administration of chloroform is identical with that for ether, and may be summarized as follows:

1. Make a careful physical examination with special reference to the lungs, the kidneys, and the heart. In the urinary examination include tests for acetone and diacetic acid. Empty the stomach, bowels and bladder.
2. The mouth should be cleared of artificial teeth or any other foreign substance.
3. The teeth should be carefully cleaned, and the mouth and throat rinsed by some aromatic antiseptic solution. Many cases of aspiration pneumonia come from oral sepsis.
4. The nose should be cleansed by blowing and by insufflation.
5. The clothing should be loosened about the throat and waist.
6. The administration should invariably be made with the patient in the recumbent posture.
7. Tongue-forceps, mouth-gag, hypodermic syringe, stimulants, adrenalin solution, and an infusion canula and saline solution should be at hand.
8. The anesthetic is preferably administered with the patient on the operating table. Deaths have been reported at the moment of lifting the patient on to the table.[4]

It is desirable and convenient to prepare the field of operation while the patient is taking the anesthetic, as this distracts his attention and saves his taking the additional amount of anesthetic necessary to cover the period of cleansing the field after unconsciousness has been established. The patient should be well wrapped in blankets, care being exercised that no chilling occurs. It is convenient for the anesthetist at the conclusion of the operation to complete his notes of the anesthetization on slips which should be filed for permanent record.

Chloroform should be kept in small brown bottles, tightly corked and in a cool place. It should not be used in a room in which there is an open flame, as hydrochloric acid is given off into the atmosphere, which greatly irritates the respiratory tracts of persons in the room.

Administration.—Vaselin or lanolin should be applied to the patient's face to prevent the contact of the drug and consequent blistering of the skin. An Esmarch's inhaler or a Skinner's mask are the most convenient and useful forms of apparatus for the simple uncomplicated administration of chloroform. The mask should be covered with a layer of flannel. Close fabrics result in less concentration of vapor than open-meshed fabrics, and in a less-uniformly sustained concentration. Legge Symes found that the chloroform drawn from under Skinner's mask showed the proper concentration and was more certain and uniformly sustained by the drop method than by the douche. A fall in frequency and depth of the patient's respirations may lead to inhalation of dangerously concentrated vapor, even when the amount of chloroform is apparently not excessive.[5]

The drug may be administered from a drop bottle or wicked out in drops with a wisp of cotton in a slit in the cork of the original bottle. Anderson suggests that a small aspirating needle be inserted through the cork, the obturator withdrawn and the drug dropped therefrom. Waller estimates that an average anesthetization should be induced in ten minutes, with less than a drachm of chloroform.

The administration should begin with the mask held five inches from the face and the evaporating plane, and should never be closer than two inches. The drug should be delivered drop by drop, approximately one drop with each inspiration. Syme found experimentally that 66 drops per minute (equalling 1 c.c.), diluted in 350 c.c. of air aspirated on an average of 20 aspirations per minute, give a vapor of 1.4 per cent. concentration. This is about the proper concentration with which to begin, as advised by the chloroform commission appointed by the British Medical Association in 1904. Waller estimates that the normal maximum concentration compatible with the effective induction of anesthesia, with freedom from unjustifiable danger, is 2 per cent.

At the outset, the patient should be reassured and instructed to breathe naturally. At the stage of excitement, which may appear in from three to six minutes, care should be exercised that too much chloroform is not given when respiration is checked. If the patient begins to struggle, the chloroform should not be pushed as with ether, but should be discontinued immediately and fresh air administered. It is in struggling that the breath is held and the absorption of chloroform already in the lungs occurs, while with the next full inhalation an overdose is frequently obtained unless the administration is temporarily suspended while the patient is not breathing.

After the stage of excitement is over the drop is continued with just enough frequency to keep the patient in a tranquil state of anesthetization. The sluggish, mobile, contracted pupil is said by Hewitt to be the desirable and safe guide by which to judge the patient's condition. Roughly speaking, a moist spot on the flannel the size of a 25 cent piece is said to be about the proper amount of chloroform to exhibit. The angle of the jaw can be held gently forward by the anesthetist, especially if there is any interference with free air passage. The temporal or facial pulse can be felt with the fingers of the hand which holds the mask over the face.

Syme's rule, "watch the respiration," is imperative. If a beginner will rivet his attention on the breathing and note its slightest alteration as the first danger signal, he will do better than by attempting to observe the many things which he is often admonished to notice. Observation of the color of the lips and of the pupils will soon become a part of the general mental vigilance which he keeps over his patient. A patient with rosy cheeks or lips is in no danger.

It is imperative for the anesthetist to watch, first, the respiration; second, the reflexes; third, the circulation; always the patient, but never the operation.

Signs of Surgical Anesthesia:

1. Regular, rhythmic, slightly stertorous, and somewhat increased respiration.
2. Contracted pupil.
3. Slow, even, and rather full pulse.
4. Absence of eye reflexes.
5. Relaxation of the muscular system.

Signs of "Coming Out:"

1. Return of pupillary reaction.
2. Conjunctival and corneal reflexes.

4. Lancet, Lond., Sept. 17, 1904, p. 842.
5. Lancet, Lond., July 4, 1904, p. 82.

3. Swallowing.
4. Attempts at retching and vomiting.
5. Shallow, non-stertorous and slow respiration.

Danger Signals:

1. Sudden pupillary dilatation.
2. Weak, thready pulse.
3. Short, irregular, gasping respiration.
4. Sudden pallor, or slight duskiness merging into cyanosis.
5. Cessation of breathing.
6. Intermittent pulse.
7. Stopping of the heart.

Resuscitation:

1. Remove the mask.
2. Lower the head. If dealing with a child, invert and suspend him by the heels; if with an adult, employ the extreme Trendelenburg position.
3. Open the mouth with a gag.
4. Seize the tongue and pull it forward.
5. Inject one or two c.c. of adrenalin (1-1,000), with salt solution, through a canula into an artery, toward the heart.
6. Employ Sylvester's method of artificial respiration, systematically performed, and kept up unremittingly for at least thirty minutes.

The latter is the most desirable and most generally applicable of all methods to resuscitate in chloroform syncope. The arms of the patient, grasped at his elbows, should be compressed firmly against his lateral chest walls, and then drawn back to full extension for inspiration; then, slowly, they should be pushed down, recompressing the chest. This cycle of respiration should simulate exactly normal respiration; the work should not be performed frantically, or with greater rapidity than to induce eighteen respirations per minute. Cases have been reported in which recovery ensued after one and one-half hours of artificial respiration. In one instance there was no sign of life for fifty-five minutes.[6]

Unfortunately, chloroform collapse is beyond the help of the so-called heart stimulants. Hypodermics are valueless, and their repeated and frenzied administration should be discouraged. One hypodermic of strychnin is, perhaps, all that is permissible, and certainly all that is of value.

Some interesting studies in experimental resuscitation have been made by Crile and Dolley.[7] By cardiac massage alone animals were rarely resuscitated at any time after quiescence of the circulation and respiration; by combining either direct or indirect cardiac massage with artificial respiration and head downward posture a certain percentage of the animals were recovered after the lapse of from one to three minutes. The results, however, were quite uncertain, and in the case of death from chloroform, recovery was the exception. . . . In the majority of these failures autopsy showed the heart to be in a state of marked distention indicating complete cardiac paralysis. . . . Not infrequently, when results were delayed, the acute cardiac dilatation was partly reduced by venesection, and by placing the dog in the inclined, head-up posture, thereby partly relieving the heart of its over-distention.

It was believed that by clinically raising the coronary pressure which inaugurates the heart-beat, as has been proved by Sollmann and others, resuscitation could be effected, just as when the excised heart has been experimentally made to beat again. Crile had already established the value of adrenalin in raising the blood pressure. It acts on the vascular walls of the blood vessels themselves. If, however, it was introduced in the venous circulation, the heart could not be influenced, and, in fact, the blood pressure could not be quickly increased, because the adrenalin had to traverse the right heart and the lungs before reaching the left side of the heart whence it went into the coronary arteries through the aorta. As a mater of fact, there is an accumulation of adrenalin solution in the dilated and paralyzed heart, and for this there is no succor. In Crile's later experience, therefore, the solution of adrenalin in salt solution was injected into the artery toward the heart, and at once it increased arterial pressure.

The conclusions which he drew from these experiments for the purpose of this study are as follows: Animals, after death from chloroform, up to five minutes are uniformly and readily resuscitated, provided the full technic be applied—1 or 2 c.c. of 1 to 1,000 adrenalin solution injected by the hypodermic syringe into the rubber tubing of the transfusion apparatus while the salt solution is flowing through a canula into an artery, and directed toward the heart. The carotid is preferred in animal experimentation, but with human beings any artery (the radial) may be selected. Up to ten minutes, in animal experiments, there is an occasional failure to resuscitate; beyond ten minutes consciousness is rarely restored, and the success of efforts at resuscitation diminishes with the lapse of time; after twenty-three minutes in adult dogs and thirty-five minutes in puppies complete return of the circulation is not accomplished. Attempts at resuscitation, if successful, occur within one minute after the administration of adrenalin in the majority of instances; it rarely occurs after an interval greater than three minutes.

In view of these experiments every operating room in which chloroform is administered should be equipped with the paraphernalia for the use of adrenalin and salt infusion.

Crile advises against open cardiac massage, which induces cardiac trauma. Massage of the motionless heart through the diaphragm, when operating in the abdomen, has been recommended in order to express the chloroform-impregnated blood. Dobson has deliberately opened the abdomen for this purpose, and successfully in a child in syncope.[8]

Percentages.—Perhaps the most intelligent addition to our knowledge of chloroform, aside from the very elaborate physiologic experiments which have been made in the last few years—and possibly as a direct outcome of these, has been the determination of the exact percentages of chloroform vapor in the dosage, and the invention of apparatus for the regulation of that dose. It is more essential to measure the dose of chloroform precisely than of any other anesthetic. While we have been estimating it roughly and empirically for half a century, only in the last four years have we succeeded in perfecting our measurements.

Snow, in 1849, employed an inhaler computed to supply a vapor of 5 per cent. at 60 F. Clover's inhaler was made on a similar principle. Junker devised an apparatus which had the same purpose in view. His apparatus has been modified by Krohne, as well as by Hewitt, and is the simplest of the percentage devices. Physiologists find that animals can be kept completely anesthetized for twelve hours under a bell jar connected with the Dubois pump, which delivers a 2 per cent. chloroform vapor. Waller says he never lost an animal

6. Lancet, Lond., May 16, 1903, p. 1367; also Brit. Med. Jour., June 20, 1903.
7. Jour. Exper. Med., viii, No. 6, Dec. 21, 1906.
8. Lancet, Lond., Nov. 30, 1907, p. 1537.

in the laboratory when using this method. The importance of the actual arithmetical percentage, its recognition and conception in figures, is shown by the experiment of an animal completely and safely anesthetized in four minutes with a 3 per cent. chloroform vapor, and the same animal subsequently killed by a three minute anesthetization with 13.2 per cent. vapor.[9]

Deaths that still occur must be ascribed to ignorance of the toxicity of the drug and the exact amount which is necessary to anesthesia. We have hitherto been unable to compute how much in excess of that necessary amount the patient is really getting. Our great danger is in cramming the towel or inhaler close down over the patient. This crowding is shown to give a 10 per cent. chloroform vapor and upward, which is five times the limit of safety.

In 1904 Vernon Harcourt devised an apparatus which seems to be a perfect regulator. Collingwood, Levy and Waller, in working along the same lines, made similar chloroform inhalers in 1904. Levy claims to do away with the objection which has been urged against Harcourt's apparatus (that shaking the apparatus greatly increases the vapor) by fixing his apparatus rigidly to the table. He also claims to prevent fluctuation in the strength of the vapor caused by variation in the character of respiration.

Dubois' apparatus establishes a continuous flow of air containing chloroform vapor of 1.2, 1.6 and 2 per cent. independent of any suction effort on the part of the patient. Dubois' apparatus is worked by turning the handle six times a minute, when each revolution delivers four liters of the chloroform and air mixture. Waller devised a wick-vaporizer energized by a foot-bellows for the same purpose. This is accurate, simple and satisfactory.

All of these devices are unquestionably on the right lines, and while many practical objections have been urged against them, they are unquestionably correct theoretically. They are not intended to do away with the skill of the anesthetist. Most of them allow the vapor to be increased to 4 per cent. Critics have objected that it requires about ten minutes thus to induce anesthesia, but this should not be a serious objection. If chloroform vapor, in clinically estimated and varying percentages, is safe in the hands of an expert, an accurate percentage is certainly no less safe. Conversely an automatically regulated percentage with which it is well-nigh impossible to produce over-dosage, is certainly less dangerous when combined with skilled employment.

The objection to the Dubois apparatus is its cost and weight, and the fact that it requires two persons to use it. We hope that some simple form of apparatus, if it has not already been devised, may be produced. Such an apparatus would render anesthesia an exact science, as well as an art.

Hepatic Toxemia.—A. D. Bevan and H. B. Favill have shown[10] that cases of late death after operations under chloroform, formerly ascribed to late shock, sepsis, uremia, fat embolism, meningitis, etc., developing in from ten to one hundred and fifty hours, with vomiting, restlessness, delirium, convulsions, coma, Cheyne-Stokes respiration, cyanosis and icterus, are due to hepatic toxemia. This is caused by the destruction by chloroform (by ether in a slight degree only) of the liver cells especially, as well as other structures. The toxemia is in direct proportion to the quantity and duration of the anesthetic.

The predisposing causes are alcohol, lead, carbolic acid, mercurial and iodoform intoxications, homesickness, fright, change of food, intestinal fermentation and putrefaction, infantile paralysis, starvation, sepsis, pregnancy in the presence of a dead fetus, a gangrenous mass, diabetes, carcinoma, anemic changes from any cause, and hemorrhage. In mild cases of toxemia, with jaundice which is only evanescent in character, the patients recover.

The poisoning is due undoubtedly to liver insufficiency; toxins develop therefore. The condition is similar to that of phosphorous poisoning. There is an acute fatty degeneration of the liver and as by-products there are acetone and diacetic acid in the urine. The danger of this hepatic toxemia renders chloroform hazardous in the presence of diabetes, sepsis, starvation, hemorrhage, intoxication from dead material, fatty degeneration after infantile paralysis, and lesions of the liver. Bevan and Favill condemn chloroform, especially in long (two hour) operations on children.

Brackett reported a series of fatal cases of acetonuria after operations. The symptoms were sweetish breath, vomiting, weak and rapid pulse, exceedingly high temperature, delirium and death. Some cases without operation, with mild symptoms of acetonuria, recover. Many cases with sweet odor of the breath, vomiting, prostration, and recovery were noted. Of the fatal cases necropsy showed fatty degeneration of the liver, kidneys and muscles. Guthrie[11] reported nine cases of death from chloroform in children with fatty livers, which he thought due to acid intoxication. Bicarbonate of soda seems valuable in this acidosis. McArthur, of Melbourne, advises the examination of the urine for diacetic acid and acetone, as a routine measure, both before and after the use of chloroform.

RECOMMENDATIONS.

1. Further investigation in physiologic laboratories of the action and safe dosage of chloroform.

2. Further experimentation in the perfection of an apparatus for the dosimetric administration of chloroform.

3. That in all hospitals a member of the staff be appointed as the head of the anesthesia department, who should personally supervise the administration of anesthetics, as far as possible, and be responsible for the instruction of those to whom their administration is entrusted.

4. Tutelage of undergraduate students in the practical administration of all anesthetics.

LOCAL ANESTHESIA.

EXTENT TO WHICH LOCAL ANESTHESIA HAS BEEN ADOPTED IN AMERICA.

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Except for strictly minor operations, the use of local anesthesia in America is limited to a few clinics, though its adoption abroad is far more general. This limitation may be due, in part, to American hurry, but more probably to inexperience in the method and a certain deep-

9. Trans. Soc. of Anesthetists, v., p. 82.
10. THE JOURNAL A. M. A., Sept. 2, 1905, p. 694.
11. Lancet, Lond., July 4, 1903.

rooted fear of poisoning, traceable to the days of strong cocain solutions.

To those surgeons who have persisted in its use and have become familiar with the technic its field is constantly broadening. In the clinics of Matas in New Orleans, of Crile in Cleveland and in a few other places local anesthesia is employed extensively. Bodine of New York reports the use of local anesthesia for all hernia operations, amounting to many hundreds in the last few years. From numerous places come reports of its satisfactory application in rectal work and in operations on the nose and throat. In my own practice its use is increasing with experience, and at the present time fully 50 per cent. of my operations are done without the aid of general anesthesia. This increase in its use is attributed to familiarity with the methods of application.

ADVANTAGES AND DISADVANTAGES.

Danger to life, as far as the anesthetic is concerned, is practically not to be considered. Postoperative renal and pulmonary complications are reduced to a minimum, as well as its disagreeable features are eliminated.

It can not be denied that pulmonary complications may occur. In the experience of the writer, however, these have never been encountered. Postoperative depression and the consequent danger of shock is less, so that age and lesions of the heart or kidneys do not have and the small but certain danger of general narcosis, the same importance as determining factors in the prevention or delaying of operations. The necessarily careful handling of tissues is an additional factor in securing rapid healing and in the prevention of infection. In general, the great amount of time necessary for operations under local anesthesia, and its employment in certain regions of the body only, represent its limitations.

SCOPE.

In minor procedures its application is unchallenged, and such small operations, as the opening of abscesses, or the amputation of fingers, toes, etc., so often done without anesthesia, may be rendered painless by a small amount of cocain properly placed. In general, when the field of operation can be rendered insensitive, local anesthesia may be used. Practically all amputations in the course of limbs may be accomplished, and in many regions the wiring of fractures or the removal of diseased bone may be painlessly done. In the abdomen, as an aid to exploration, it is quite satisfactory, and has accomplished a great deal in diminishing our fear of opening the abdomen in such conditions as typhoid perforation. For operating on organs in apposition with the abdominal wall, and requiring little retraction, local anesthesia is sufficient.

The removal of the appendix in the interval is usually an easy and painless procedure in the absence of adhesions. Its usefulness in the abdomen is limited by the amount of retraction and dragging on the parietal peritoneum necessary for the accomplishment of the desired operative procedure. All forms of hernia are amenable to its use. In no case of inguinal hernia is a general anesthetic necessary, and with strangulation, local anesthesia is almost imperative. All operations about the scrotal and inguinal regions can be done with absolute freedom from pain. The character of the patient is a small factor. Children are necessarily difficult subjects, but with experience the "nervous patient" as a contraindication has practically disappeared. In extensive dissection for malignant disease, local anesthesia should not be considered.

ANESTHETIZING SUBSTANCES AND THEIR PREPARATION.

Since the introduction of cocain, in 1884, numerous local anesthetics have been brought forward. While in individual clinics many of these are still in use, cocain and eucain β alone have held general favor. It seems to me that the danger of poisoning from cocain has been greatly over-rated, and with the adoption of adrenalin and the use of weak solutions, fear of poisoning scarcely deserves consideration. The advantages claimed for eucain are that it is only one-fourth as toxic as cocain, and that its solutions stand boiling. Its disadvantages are that anesthesia is obtained by it more slowly and does not last as long as that from cocain. After an extensive use of cocain I have no fault to find with it, and I consider it, with proper precautions, the most satisfactory of all local anesthetics.

PREPARATION OF SOLUTIONS.

The solution for injection should fill the following conditions: (a) It should be isotonic with the fluid of the body tissues; (b) it should be sterile; (c) it should contain a definite amount of the anesthetizing substance; (d) it should be so constituted as to obtain the greatest action with the least danger of absorption.

Such a solution is most conveniently prepared by the use of tablets, containing cocain hydrochlorate 0.05 gm. and adrenalin 0.00016 gm. These tablets are sterilized in dry heat at 80 C. for an hour on each of three successive days, and are dissolved in sterile normal salt solution immediately before the operation. A fresh solution, isotonic with the blood, is thus obtained, containing a definite amount of cocain, while through its adrenalin content it limits absorption. One tablet dissolved in 50 c.c. of salt solution yields a 1:1000 solution of cocain, and one tablet in 5 c.c. makes a 1 per cent. solution. These solutions may be diluted for special use by the addition of salt solution. These tablets are in the American market and have proved most satisfactory to me. I offer them as the most satisfactory vehicle for the preparation of solutions for local anesthesia.

TECHNIC.

Success with local anesthesia depends largely on experience and practice, as well as on the patience of the operator; but especially on his minute knowledge of sensory nerve distribution, so that he may surely make the application where it will do the most good, with the avoidance of painful manipulations.

The methods of application, briefly, are: (1) Surface applications; (2) infiltration; (3) nerve blocking through endoneural and perineural injections. Each of these has its special applications, or all of them may be combined in one operation.

In addition to the purely local methods the combination of local with general anesthesia forms a most important addition to our anesthetizing methods.

In the general technic and preparation I wish to emphasize the importance of the mental attitude of the patient, obtained by a small preliminary dose of morphia; the mutual confidence between patient and surgeon; the quiet conduct of the operating room; the avoidance of haste, and the careful handling of tissues on the part of the surgeon.

In regard to the methods of injection, the operator's individual choice is the best criterion. In my own work the small hypodermic syringe has been sufficient. Other surgeons prefer larger syringes, and more complicated needles. For the accomplishment of massive infiltra-

tion, the pressure apparatus of Matas has proved most satisfactory. It has been found by experience that very weak solutions of cocain, combined with adrenalin, will accomplish with a minimum of danger all that can be obtained by the use of stronger solutions. For nerve blocking a 0.5 to 1 per cent. solution of cocain is quite strong enough. For ordinary infiltration a 1 to 1,000 solution of cocain suffices, and for massive infiltration a 1 to 3,000 solution of cocain is ample. Eucain solutions may be of practically the same strength.

CONCLUSIONS.

1. Whereas I do not submit local anesthesia as a substitute for general anesthesia, I do believe it has a definite field of usefulness, and that this field may be increased by familiarity with modern methods and experience in their use.

2. Whereas the danger of general narcosis may be small under the best conditions, that from local anesthesia is always less.

3. Whereas in individual hands one or other of the newer anesthetics may possess certain advantages, cocain and eucain have proved most satisfactory in the long run.

4. The danger of poisoning has been practically eliminated by the use of weak solutions in combination with adrenalin.

5. The methods of application may be classified as: (a) Surface application; (b) infiltration; (c) nerve blocking by endoneural and perineural injections; (d) these methods used singly or in combination, or any or all of them combined with more or less general anesthesia.

6. Success depends on the temperament and patience of the operator, his familiarity with sensory nerve distribution and his experience in the use of local methods.

SPECIAL METHODS OF ANESTHESIA.

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BOSTON.

In certain operations the selection of the anesthetic agents and the method of their administration is of such importance that the success of the operation may be said to depend on the way in which the anesthesia is conducted. This is particularly true in operations about the head and neck in which, in order to do his best work the surgeon should have a clear field and be interfered with as little as possible by the anesthetist.

This statement holds true, also, of operations on the thoracic cavity, empyema or abscess of the lung; in operations on the kidney, with or without an existing nephritis; in certain grave abdominal operations, especially in those with peritonitis and vomiting; and in bladder and prostate operations on old men.

In such cases the anesthetist should always see his patient the day before operation, and after a careful examination (to study especially the breathing) should determine what agents and methods he is to use. Besides being governed in his selection by the ordinary considerations of sex, age, temperament, condition of lungs, heart and kidneys, he must plan the anesthesia so as to interfere with the surgeon as little as necessary, and help him as much as possible.

OPERATIONS ON THE HEAD AND NECK.

This is a broad field and includes: brain operations, eye and ear operations, nose and throat operations (including the antrum and frontal sinus), resection of the lower jaw, extirpation of the tongue, extirpation of goiters, removal of enlarged lymph nodes, operations on the larynx, esophagus, etc.

Generally speaking, it is important in all these operations (except in cerebral operations), to administer relatively large doses of morphin and atropin half an hour or twenty minutes before the operation. These doses should be as large as possible: for women, morphin, 1/6 to 1/4 gr., atropin 1/50 to 1/100 gr.; for men, morphin 1/4 to 1/2 gr., atropin 1/100 gr., will not usually be found too large. This is particularly important if we are depending on simple inhalation anesthesia, because morphin intensifies and prolongs in a marked degree the anesthetic action of either chloroform or ether, so that after anesthesia is complete patients will often remain in a condition to continue the operation in twenty or thirty minutes after the removal of the inhaler.

If rectal anesthesia is used the morphin and atropin may be omitted or administered in smaller doses, according to the patient's characteristics.

The methods which may be used for anesthetizing in operations on the head and neck are: 1. Simple inhalation anesthesia. 2. Anesthesia by Greene's thermo-ether inhaler. 3. Scopolamin-morphin anesthesia. 4. Rectal anesthesia. 5. Crile's intubation of the pharynx.

1. Simple inhalation anesthesia by ether, chloroform, or mixtures of the two is still preferred for these operations by many surgeons. If the patient is well narcotized at first by morphin and atropin, and then deeply etherized, a very long available anesthesia[1] can often be produced. It is not uncommon to obtain an available anesthesia of from ten to thirty minutes and even longer. When the available anesthesia has passed, from five to eight minutes is usually ample time in which again to put the patient deeply under the anesthetic.

The disadvantages of this method are, (1) that available anesthesia varies a great deal in different patients and may be too short to be of any use, and (2) that by the deep anesthesia produced by both morphin and ether, dangerous respiratory depression may result.

SCOPOLAMIN-MORPHIN ANESTHESIA.

3. Scopolamin-morphin anesthesia may be employed in certain cases. The method consists in giving 1 mg. of scopolamin, and 25 mg. of morphin, divided into three equal doses, which are administered two and one-half, one and one-half and one-half hour before the operation, which is to begin one-half hour after the last dose.

In major surgery reported results seem to show that often it is dangerous and sometimes not successful—inhalation anesthesia often having to be used to keep the patient quiet enough to operate on him.

Recovery from the anesthesia is usually long delayed, and the method has obvious disadvantages. By this method we seem to be deliberately over-dosing patients, with very dangerous drugs; and although it might be justifiable to use it in certain hopeless cases of extensive cancer, it should not be the method of choice in ordinary cases. In a series of 92 cases, Ries reports three deaths.[2]

1. Available anesthesia is the working anesthesia that ensues after the inhalation is stopped.
2. Ann. Surg., 1905, xlii, 193.

RECTAL ANESTHESIA.

4. The improved technic and good results of Cunningham of Boston, and Brewer of New York show this form of anesthesia to be safer than at first was supposed. In carefully prepared patients and with a gradual administration through a suitable apparatus, very good results can be obtained, and it is, of course, an ideal form of anesthesia for all head and neck operations. The earlier experimenters worked, often, on unprepared patients, and with faulty technic, having their ether too much heated. As a result collapse and bloody diarrhea sometimes followed. Brewer's series of over one hundred cases and Cunningham's of over two hundred without deaths warrant a careful and intelligent use of the method.

Success depends on a careful preparation. The patient's rectum is emptied by full doses of magnesium sulphate followed by two cleansing enemata, the last one to be given an hour before the operation.

Cunningham's latest apparatus consists of a wash bottle, 7½ inches high and 4 inches in diameter, placed in a large glass jar full of water at 98 F. Five inches of the height of the bottle is occupied by ether, leaving 2½ inches for vapor space. An afferent tube leads to the bottom of the ether; an efferent tube is cut off flush with the stopper in the bottle. A double cautery bulb forces air by the afferent tube through the ether, which it leaves in the form of vapor through the efferent tube. The efferent tube ends in an ordinary rectal tube. Heat is retained in the glass jar by a tin cover, having a hole for the neck of the bottle, and another for a thermometer which registers the temperature of the water.

With the patient in the dorsal position, one thigh is held slightly elevated by a sandbag, and the rectal tube is introduced eight or ten inches. Gentle pressure of the cautery bulb slightly distends the rectum, and the forefinger, being held at first along the rectal tube, allows the escape of flatus from the rectum. The bulb must now be pressed gently at regular intervals, and as the patient becomes accustomed to the tube the finger may be withdrawn. As the bowel absorbs the vapor, the patient may complain of a desire to defecate, and of slight abdominal discomfort. This is due to distention, and must be met by reintroducing the finger to allow the escape of superfluous vapor.

In from three to five minutes the odor of ether may be perceived in the patient's breath. In two or three minutes more he becomes drowsy, the eyes close, the breathing becomes tranquil, regular, and slightly stertorous, and he passes into complete anesthesia, usually without excitement or struggling. The time necessary to produce complete anesthesia by this means varies from six to fifteen minutes, according to the patient and the absorbing qualities of his rectal mucous membrane. Anesthesia once established is easily maintained by gentle pressures of the bulb every one or two minutes.

After the operation the rectal tube is disconnected from the apparatus, but is left in the rectum, while gentle massage along the course of the colon expels any remaining ether vapor. The rectum is then again cleansed by an enema.

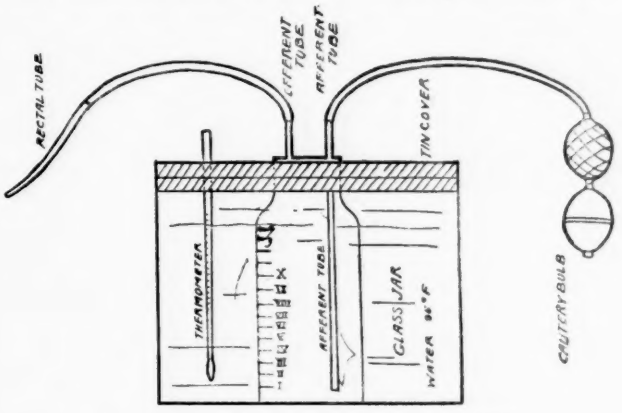
5. Crile's procedure of packing and intubing the pharynx is a very useful method for producing anesthesia in cases of extirpation of the tongue, resection of the lower jaw, etc. Full anesthesia having been obtained by the usual methods, two rubber tubes, eight inches long, beveled at the distant ends, are passed through the nares down to the epiglottis. The whole larynx is then firmly packed with a large piece of gauze, and respiration is caried on entirely through the tubes. The upper ends of the tubes are connected with the two arms of a Y-tube. The stem of the Y-tube terminates in a funnel lightly packed with gauze, on which ether is dropped.

This method works very well and absolutely prevents the swallowing or inhalation of blood, mucus and saliva.

The above procedures are the most important special methods at our disposal for anesthetizing in head and neck operations. A brief mention of certain other operations brings out additional points of interest.

OPERATIONS ON THE BRAIN.

The subjects of these operations are apt to be either restless and delirious, or stupid and lethargic. The former class requires the use of morphin and atropin in small doses; the latter requires no morphin or atropin. When once carefully anesthetized, most brain cases can be controlled with very little of the anesthetic, usually but a few drops of ether or chloroform from time to time. The pulse is frequently slow, and it is easy to over-anesthetize such patients with the production of a



Cunningham's apparatus for rectal anesthesia.

serious circulatory and respiratory depression. Therefore a light anesthesia should be maintained.

The method of continuous cardiac auscultation is employed for these cases in Harvey Cushing's clinic. By this means the anesthetist maintains a surprisingly close acquaintance with his patient's condition from moment to moment.

Gas should not be used owing to the sudden rise in arterial pressure that it produces. As a rule, inhalation-anesthesia induced by chloroform or the A. C. E. mixture and maintained by ether (semi-open method), is the best form of anesthesia for brain operations.

For most *rhinologic and laryngologic operations*, such as removal of tonsils and adenoids and nasal spurs, we use ordinary inhalation anesthesia by gas or ether, or by simple ether with the semi-open or closed method. In operations on the frontal sinus, antrum of Highmore, and larynx, special methods are required. Speaking generally, rectal anesthesia answers admirably for all three of the above mentioned operations.

Anesthetization for operations on the larynx may present a very interesting problem, the solution of which is, of course, at hand if rectal anesthesia is used. If it is not used, anesthesia may be induced by the inhalation of chloroform, or A. C. E. mixture, and may be maintained by the same drugs administered through a

tracheotomy tube and catheter, at one end of which is a funnel lightly packed with gauze.

The Trendelenburg position and the Trendelenburg tube[3] are useful. This method is disagreeable, however, and not without danger. Rectal anesthesia is preferable.

EMPYEMA.

In operations for empyema the serious mistake is often made of having the patient lie on his side with the sound lung underneath. This hampers respiration. If the patient happens to have abscess of the lung and not empyema, the pus from the abscess cavity may, if the position of the patient is faulty, as described, flow over into the sound lung and suffocate the patient. Commencing the operation with chloroform or C. E. obviates coughing and the production of mucus; the patient may then be charged up with ether and operated on in a sitting position, thus giving the sound lung a good chance to work.

In empyema, rectal anesthesia, if possible, is the ideal form of anesthesia.

Edebohl's operation for decapsulating the kidneys is often done under gas and oxygen administered by Hewitt's apparatus, which provides for varying percentages of oxygen to be given with nitrous oxid. This is undoubtedly the least irritating form of anesthesia for both kidneys and lungs. A curious fact in connection with it, however, is that temporary glycosuria often follows its use.

For old and middle-aged men, requiring prostatectomy, we find that mixtures of ether and chloroform, preceded by morphin and atropin, make the best form of anesthesia, controlling the patients well, and leaving slight after-effects, provided we do not use spinal analgesia.

2. An anesthesia produced as described above may often be successfully maintained by using Greene's modification of Fillebrown's thermo-ether inhaler.[4] In this apparatus a foot-bellows forces air by an afferent tube through ether contained in a bottle which is held in a boiler full of water at 98 F. The heat produces a more rapid vaporization of the ether, and thus intensifies its strength. An efferent tube conducts the warm vapor to the patient's mouth, where a patent stop-cock so controls the supply of ether that it is admitted during inspiration only.

The patient must be deeply etherized at first by ordinary methods, otherwise reflex coughing and partial recovery from anesthesia may result when one uses this apparatus.

THE BLOOD CHANGES INCIDENT TO SURGICAL ANESTHESIA.

*WITH SPECIAL REFERENCE TO THOSE INDUCED BY NITROUS OXID. A CLINICAL AND EXPERIMENTAL STUDY.**

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The phenomena of general anesthesia had scarcely been appreciated before the corollary arose: Does narcosis harm the animal economy, and, if so, in what particulars? A number of physiologic and clinical studies have been made by different investigators to determine whether the anesthetics ordinarily employed are harmful. The present study may be grouped with these researches and was undertaken at the suggestion of Dr. A. D. Bevan with the hope of defining as accurately as possible the blood changes incident to nitrous oxid anesthesia. The increasing use of this gas as an anesthetic in major surgical operations, as well as the increasing time of anesthesia, were factors which prompted the investigation. In particular, we attempted to answer the following questions: 1. Does nitrous oxid reduce the hemoglobin and thereby cause anemia? 2. Does it cause hemolysis? 3. Does it increase the coagulability of the blood and thereby increase the danger of postoperative thrombosis? 4. Are its effects on hemoglobin, red blood cells, coagulation, etc., more harmful than those produced by chloroform or ether? 5. Are there other untoward blood changes? In a rather careful inquiry into the literature nothing was found bearing specifically on these points.

Hewitt,[1] dealing with anesthetics in general, writes as follows:

> Little is accurately known as to the changes which anesthetic gases and vapors produce in the blood itself.
>
> Speaking generally, it would seem that most anesthetics enter and leave the blood without producing in it any destructive or important changes save those which must inevitably result from interference with normal respiration necessarily incidental to the plan of administering anesthetics by inhalation. When, as is the case with certain of these agents, the oxygen supply is greatly diminished or the elimination of carbonic acid is retarded, the usual effects of asphyxial blood on the medullary centers and cardiovascular system will be produced. Sansom, Wittich, Böttcher and other observers, however, have described alterations in the red blood corpuscles, and according to the Glasgow Committee of the British Medical Association, disintegration of these corpuscles takes place within the pulmonary capillaries during inhalation. Grube urges that as urobilinuria may occur two or three days after anesthesia, it is probable that the destruction of red blood corpuscles is a result rather than an accompaniment of the administration.

METHODS.

The observations about to be reported are based on clinical and experimental work. The clinical observations were made on patients in the various surgical services of the Presbyterian Hospital. The experimental work was done in the Laboratory of Experimental Therapeutics at the University of Chicago, dogs being used for the purpose.

The clinical data were obtained in as nearly a routine manner as possible. The blood readings were taken in the morning at about the same hour and usually just before the beginning of the anesthesia. The hemoglobin was read with the Dare instrument, the mean of three readings being taken. The red and white cells were counted in the usual way with the Thoma-Zeiss apparatus. The volume index was obtained after the manner advised by Capps[2] by the use of dry clean hematocrit tubes on the electric centrifuge. The coagulation time was determined by the Brodie and Russell coagulometer, as modified by Boggs.[3] Some of the earlier readings were taken by the Hayem method, but these tallied so closely with the others that they are included as well.

Whenever possible, the second readings were taken in the cases of gas anesthesia while the patients were nar-

3. This is an ordinary tracheotomy tube fitted with an inflatable tube to protect the lungs from blood, mucus, etc.

4. Am. Pract. Surg., iv, 186.

*From the Surgical Clinic of Dr. A. D. Bevan, Presbyterian Hospital, and the Laboratory of Experimental Therapeutics (S. A. Mathews, director), the University of Chicago.

1. Anesthetics and Their Administration, London, 1907, pp. 66 and 99.

2. Jour. Med. Research, 1903, 10, 367.

3. Hinman and Sladen: Bull. Johns Hopkins Hosp., 1907, xviii, 207.

cotized and while moderately cyanotic. The third reading was made immediately after the inhaler had been removed, but not until the patient was awake, perfectly conscious and showing no trace of cyanosis. The readings were obtained for the fourth time twenty-four hours later, and in some cases again seventy-two and ninety-six hours, and again in from five to seven days. The omissions in the tables are due to unavoidable happenings, such as immediate departure of patients after short anesthesia, the interference of some more necessary duty at the exact reading time, the death of patients, etc.

No attempt was made to select cases, but for the most part no severe hemorrhage or other factor arose which might have influenced the readings. One case of chronic obstructive jaundice was excluded because of the uncertainty of color estimation in the presence of bile pigment. In all, twenty cases were examined to determine the effect of nitrous oxid anesthesia on hemoglobin alone, eight cases in which the reds were counted along with the hemoglobin readings and the color index determined, fifteen cases to determine the effect of nitrous oxid on coagulation time, twenty-five cases as a control, showing the effects of ether; in addition a few red cell volumetric determinations, urinary examinations for urobilin, gross leucocyte counts and differential preparations for nucleated reds were made.

The experimental work was done on forty-two dogs. The hemoglobin, red count, volume index and coagulation time were determined before, during and after anesthesia with nitrous oxid, ether and chloroform, respectively. The nitrous oxid series was amplified by specific gravity readings (method of Hammerschlag) and spectroscopic determinations. Likewise a number of experiments were performed to determine the physiologic mechanism responsible for the blood changes.

One of us (Ewing) investigated further the effects of anesthesia on the fixed tissue cells, as well as the relation of increased coagulability and peritoneal irritation to postoperative thrombosis. These results will be published subsequently in a separate communication.

EFFECT OF ANESTHESIA ON HEMOGLOBIN AND ERYTHROCYTES.

NITROUS OXID ANESTHESIA.

(*a*) *Literature.*—The first noteworthy contribution on blood changes due to anesthetics appeared in a report to the Royal Medico-Chirurgical Society in 1861, wherein Sansom[4] showed that anesthetic substances added to blood in test-tubes destroyed its corpuscles and liberated hemoglobin. A few years later, in 1869, McQuillen.[5] after an examination of patients' blood before and after anesthesia with ether, chloroform and nitrous oxid, stated there was no evidence of corpuscular degeneration. Amory,[6] in 1870, experimenting on dogs, came to the conclusion that nitrous oxid anesthesia diminishes the amount of carbon dioxid exhaled by almost one-half.

Turnbull,[7] experimenting on frogs and rabbits, in 1879, found no perceptible change in the morphology of the red corpuscles after the animals had been placed in containers of nitrous oxid and allowed to remain there until stupefied. MacMunn,[8] in 1880, stated that in the arterial blood of an animal killed with nitrous oxid are only spectrum lines of reduced hemoglobin, while that of an animal dead from chloroform gave an oxyhemoglobin line very clearly. Ulbrich,[9] in 1887, found no hemoglobin by spectroscopic analysis in blood saturated with nitrogen monoxid. Rothman,[10] working a year later with more dilute solutions of such blood, established the spectrum of hemoglobin unimpaired. The results of Rothman agree with those of Hermann,[11] Jolyet and Blanche,[12] Goldstein,[13] MacMunn,[14] Buxton and Halliburton.[15]

Van Arsdale[16] concludes there is no true combination of nitrous oxid with hemoglobin; that the spectrum lines are unchanged; that the nitrogen monoxid goes into solution in the plasma, and that there is a real specific anesthetic action.

Kemp[17] experimented on fifty dogs to determine whether or not anesthesia was due to asphyxia or to some specific action. In an analysis of the blood gases during nitrous oxid anesthesia, he finds complete anesthesia possible while the blood is carrying about 8.5 per cent. of O, 25 per cent. of N_2O, and 17 per cent. of CO_2. He found, further, that the blood mixed with soda solution in the canula connecting the animal with the kymograph always gave the spectrum of oxyhemoglobin, and that attempts at producing a compound of nitrous oxid and hemoglobin by saturating the blood with the gas always resulted negatively. He reasons that the gas is held in simple solution in the plasma in an amount equal to that absorbed by water, and concludes that nitrous oxid is a specific anesthetic not dependent on asphyxia for its effects.

(*b*) *Clinical Results.*—The twenty cases (Table 1) in which the effect of nitrous oxid anesthesia on hemoglobin was studied and on which the following deductions are based, consist of anesthesias of varying lengths, from three to thirty minutes, with an average of 16.1 minutes. The time noted is the actual time the patient was supposed to be narcotized. The hemoglobin range before anesthesia was from 59 to 98 per cent., with an average of 78.4 per cent. The hemoglobin readings (Dare) during anesthesia varied from 75 to 120 per cent., with an average of 88 per cent. The readings immediately after the patient became conscious ran from 60 to 87 per cent., with an average of 74 per cent. Those taken twenty-four hours later varied from 58 to 100 per cent., with an average of 76.9 per cent.

In a summary of four cases in which the readings were taken without a break in the series, the averages before, during, and immediately after, and in twenty-four hours, were 75, 89.1, 70.5 and 74.2 per cent. In a series of seven cases, which is complete, with the exception of the late twenty-four-hour reading, the averages are 83.4, 90.4 and 70 per cent. for the same readings as above.

In a total estimation of the average rise, fall immediately afterward and of the fall in twenty-four hours, we find 10.3, 5.2 and 1.3 per cent., which, expressed in percentages of the average hemoglobin reading before, is 13, 6.5 and 1.6 per cent.

4. Quoted by DaCosta and Kalteyer: Am. Surg., 1901, 34-329.
5. Dent. Cosmos, March, 1869.
6. N. Y. Med. Jour., xii, 1.
7. Quoted in Lyman: Artificial Anesthesia and Anesthetics, New York, 1881.
8. The Spectroscope in Medicine, London, 1880, xiii, 73.
9. Prag. med. Wchnschr., 1887, (22).
10. Vierteljähr. f. Zahnheilk., 1888, No. 3.
11. Arch. f. Physiol., 1864, 524-526.
12. Arch. f. d. ges. Med., 1878, 334-336.
13. Id.: 1878, xvii, 135.
14. Dublin Jour. Med. Sc., 1879, p. 210-211.
15. Trans. Odont. Soc. Gt. Brit., 1887, xix, 96.
16. Am. Jour. Med. Sc., 1891, 102, 131.
17. Brit. Med. Jour., 1897, 2, 1480.

We may say, then, that during nitrous oxid anesthesia there is an increase of 13 per cent. in the Dare reading of hemoglobin while the patient is narcotized and showing a shade of cyanosis; that there is a fall of 6.5 per cent. immediately the mask be removed, and that this fall is reduced to 1.6 per cent twenty-four hours later, apparently showing that it was a transient phenomenon.

What this rise and fall is due to, whether or not there is a true polycythemia in the first instance and an oligocythemia in the second were the immediate problems which presented themselves, once the stability of the curve had been established. To this end, eight cases were investigated and the reds counted, together with Dare readings, and the color indices determined.

(*c*) *Effect on Hemoglobin, Red Blood Cells and Color Index in a Series of Eight Clinical Cases.*—The results of these have been grouped together in Table 2. Because of incomplete records, the readings during anesthesia have been omitted. In three cases in which the hemoglobin was read during anesthesia, however, the same increase shown in Table 1, from 10 to 17 per cent., was noted. The red count in one of these cases increased 900,000 cells during narcosis. We have averaged the readings similarly to the hemoglobin readings in the preceding table and find the following:

The hemoglobin readings before, immediately after, twenty-four to forty-eight hours later, and five to seven days after, are 74.3, 72.4, 76.6 and 81.3 per cent., respectively. Analyzing these briefly, we see a slight fall immediately after the anesthetic, as in Table 1. The reading twenty-four hours later, however, is slightly higher than the original (2.3 per cent.), while the late hemoglobin reading shows a 7 per cent. increase.

The red count, on the other hand, does not follow this hemoglobin change accurately. Instead of the fall immediately after consciousness is regained, there is a slight increase in the number of circulating reds, an apparent polycythemia of 177,000 cells. This rises still higher twenty-four hours later when an increase of 333,700 cells is noted. By the fifth to the tenth day, however, the count has very nearly reached normal, although a slight increase above the original average still persists.

Calculating the color index (relative percentage of contained hemoglobin) from the above values we find a slight drop of 0.06 per cent. immediately after anesthesia; a gradual return to almost normal (throughout this paper "normal" blood readings are to be interpreted as the readings of that particular case before the anesthetic was administered) in twenty-four hours, and a steady increased absorption of hemoglobin coloring matter until on the seventh day the index is 0.04 per cent. above the original quotient.

Briefly, we may summarize these findings by saying that in this series of clinical cases nitrous oxid produced little change in the relation of the blood cells to their hemoglobin content; that the fall of hemoglobin noted immediately after anesthesia was not followed closely by a corresponding fall in the red count, but that, if anything, there was a slight increase in the number of the circulating reds which persisted, and that, as an end result, there was a slight increase in the hemoglobin content per cell and no demonstrable change in the number of the red blood corpuscles.

These facts would show that there was no grave result from the anesthesia so far as hemoglobin estimates and red cell enumeration could determine. The immediate hemoglobin fall was still unexplained and appeared constant. The other variations were slight and not constant, and appeared to be within the bounds of experimental error.

As a result of these two investigations, there appears to be no oligocythemia due to hemolysis and no persisting oligochromemia or anemia. But the problem of the great increase in the Dare reading during anesthesia, the question whether this is due to a true polycythemia, anhydremia or other phenomenon was still unsettled. For the solution of this question we turned to the laboratory and began our experimental work on dogs.

(*d*) *Changes in Hemoglobin, Erythrocytes, Color and Volume Indices, Specific Gravity and Leucocytes in a Series of Experimental Animals.*—The results in these experiments were obtained from a series of readings on seven full grown healthy fox terriers, ranging from 4 to 7 kilos in weight. The blood was obtained from a vein, exposed after washing and shaving the inner surface of the ear. We found this to be important, that the blood might be obtained running freely from the cut vein, as even the slightest pressure caused a wide variation in the readings. There was no further preparatory treatment, such as limitation of the diet and water, or the administration of any drug. Immediately after anesthesia the dogs were placed in separate cages until conscious, and were then allowed their usual diet with no restrictions.

The protocols of the several experiments have been grouped as compactly as may be in Table 3 in the order of lengthening time of anesthesia. In order that the readings may be more easily interpreted and connotated, we have prepared Table 4 which shows the average readings of the seven cases for each component separately (Chart 1). An inspection of these results brings forth some very striking facts.

In the first place, we see the same rise and fall in the Dare hemoglobin readings as noted clinically in Tables 1 and 2. We see further that this apparent fall comes nearly back to normal in two hours after anesthesia; that twenty-four hours later it is not only back but slightly higher than the original and that this gradually falls till on the sixth to the ninth day it is practically what it was before anesthesia began.

A study of the erythrocytes shows a most interesting phenomenon, namely, that during anesthesia there is an apparent large increase in the number of red cells, 874,000, and still more suggestive, that as soon as the dog is conscious this high red count has already started to fall, and two hours later has reached a point equal to that before the experiment was started. The subsequent red counts for the succeeding days hover around this same count and show no constant change.

That the change in hemoglobin and reds does not go absolutely hand in hand, is well brought out by the color index readings wherein we see a high decimal during anesthesia, followed by a low reading immediately after. In two hours, however, the quotient is the same as the first reading and remains so with slight oscillations till the ninth day.

The volume index readings were desired in the first instance to control any change in the integrity of cell volume due to nitrous oxid anesthesia, and secondarily to investigate from no particular *a priori* consideration any volumetric change which might occur. The hematocrit readings show clearly that the gross volume of cells follows closely the increased cell count, thereby ruling

out any variation in the percentage volume of the individual corpuscle.

The specific gravity readings show a rise during and immediately after anesthesia, with a return to the normal in two hours. This agrees closely with the expected change due to the increased blood weight from the concentration of cells.

Leucocyte counts were taken merely for the sake of completeness and to see if they corresponded to the red cell readings. An inspection shows a curve following closely that of the erythrocytes, with the single exception in the two-hour reading which, instead of dropping to the normal, as the majority of the other components do, remains high, to gradually reach normal in twenty-four to seventy-two hours.

The anesthesias in this series were all performed in the same manner, with the exception of Cases 3 and 4, in which a mixture of from 3 to 4.5 per cent. of oxygen was substituted for air. It was thought interesting to see if there was any demonstrable change in the various readings due to the interpolation of oxygen gas because of the fact that at present many nitrous oxid anesthesias are being given with this admixture.

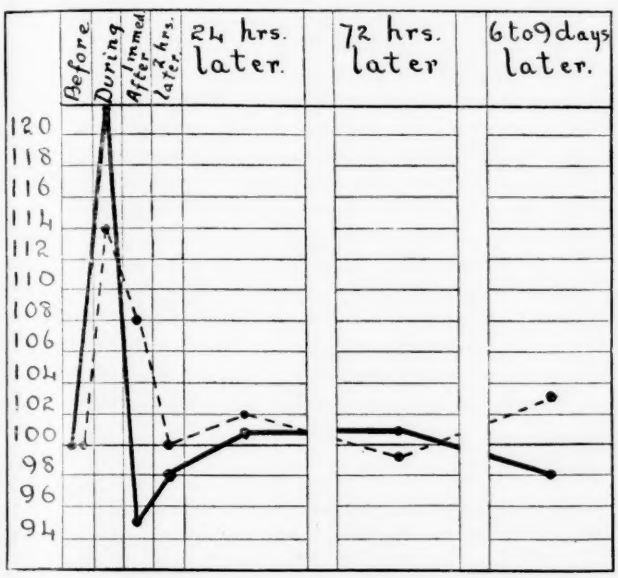

Fig. 1.—Curve showing effect of nitrous oxid anesthesia on hemoglobin (solid line) and erythrocytes (broken line). Summary of results of seven animal experiments (Table 4).

Table 5 shows a summary of the two nitrous oxid-oxygen cases with the five nitrous oxid-air series. Analysis shows a very interesting difference insofar that the hemoglobin readings in the oxygen cases show practically no greater change than the increased cell count would demand; the color index thereby not showing the increase noted in the nitrous oxid-air cases. The explanation of this difference we hope to demonstrate later in the paper.

The growing tendency of clinicians to use nitrous oxid in cases requiring long anesthesia lead us to investigate the variations in blood changes dependent on increased time and therefore amount of nitrous oxid employed. Table 6 shows a comparison of two cases of over two hours' duration with two cases of less than forty-five minutes' duration. A survey of these cases shows that a greater rise of red cells, hemoglobin and specific gravity occurs during prolonged anesthesia; that the color index remains unchanged and that in two hours this increase in reading drops to normal. Summarizing the facts this series has established, we find that:

1. The rise and fall in hemoglobin readings first observed clinically holds true in experimental animals. 2. The return to normal occurs within two hours after anesthesia. 3. There is an accompanying rise and fall of erythrocytes. 4. This change does not exactly correspond to the hemoglobin change as shown by the high blood decimal during anesthesia and the low quotient immediately after. 5. The percentage volume undergoes little if any change. 6. The specific gravity increases and decreases hand in hand with the red cell change. 7. There is a postnarcotic leucocytosis closely following the red cell curve.

The physiology of these various phenomena and their significance we have grouped under a separate heading, for the explanation of which we must include a number of isolated experiments.

(*e*) *Physiology of Blood Changes Under Nitrous Oxid Anesthesia.*—We first attempted to explain experimentally the hemoglobin rise during nitrous oxid anesthesia. Thinking that the Dare readings might be erroneous because of lack of oxygenation, we compared them with a series of von Fleischl readings of the same blood inasmuch as the blood during the latter manipulation undergoes thorough mixture with water and air. Table 8 shows the results of such a comparison with controlling red cell counts and color index determinations.

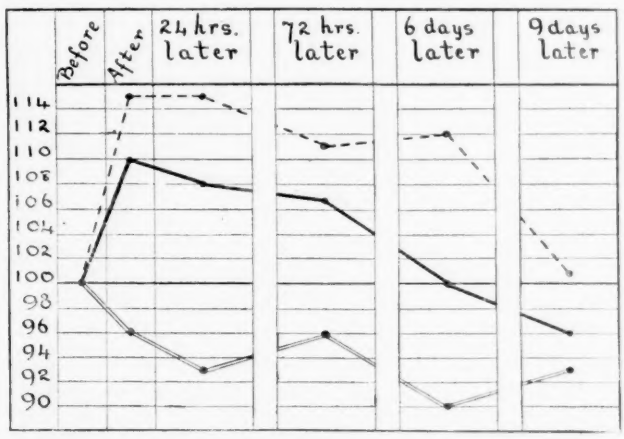

Fig. 2.—Curve showing effect of ether anesthesia on hemoglobin (solid line) and erythrocytes (broken line). Color index indicated by double line. Summary of results of five animal experiments (Table 9).

This shows a marked discrepancy of an average of 10 per cent. in the hemoglobin readings as read with the two instruments. Also we see that the color index with the Dare increases, while the von Fleischl remains unchanged. These results lead us to the conclusion that the hemoglobin as read by the von Fleischl instrument is the most correct insofar as the hemoglobin is thoroughly exposed to the air by the process of dilution, and as it follows exactly the changes in the red counts.

Why does the Dare instrument read high during nitrous oxid anesthesia? It was a striking fact noted early in the investigation that the blood was not only blue as it streamed out over the patient's ear, but remained blue in the Dare holder. To elucidate this problem we did the following things: Ten cubic centimeters of blood were withdrawn from the carotid artery of a dog after he had been partially anesthetized with ether. This was defibrinated and a number of Dare

determinations and spectroscopic examinations were made. Nitrous oxid was then passed through for ten minutes. At the end of this time there was no gross change in the color of the blood; a second group of Dare readings showed the same average; the spectroscope showed unchanged oxyhemoglobin.

These negative findings suggested the theorem: Inasmuch as nitrous oxid alone in the test-tube produces no change comparable to the change found in anesthetized animals' blood, what is the causative factor? To this end blood was withdrawn from the carotid artery of three dogs during anesthesia, defibrinated, and the Dare reading taken. Pure oxygen gas was then passed through for five minutes and the hemoglobin again read. Table 8 shows the results of these readings, showing a drop of 24.8 per cent., from 114.8 before to 90 per cent. after gas had been passed through.

We concluded, then, that inasmuch as there was no demonstrable change from nitrous oxid and blood alone in the test tubes, and because the blood under nitrous oxid anesthesia can be brought back to what it was before anesthesia (by passing oxygen through it in a test tube) that part at least of the high hemoglobin reading was

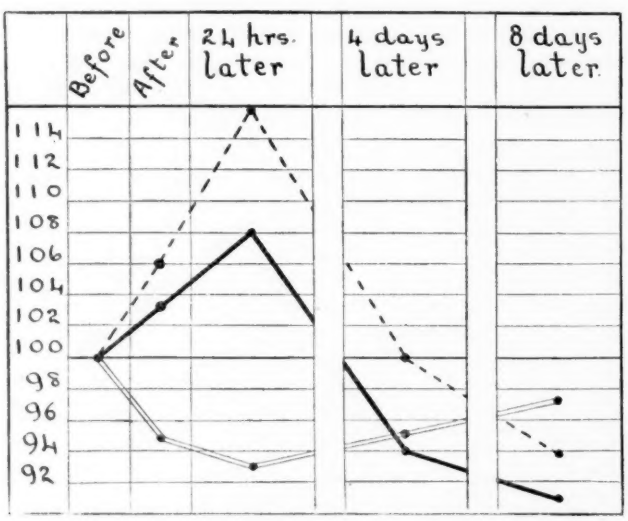

Fig. 3.—Curve showing effect of chloroform anesthesia on hemoglobin (solid line) and erythrocytes (broken line). Color index indicated by the double line. Summary of five animal experiments (Table 10).

due to some product contained in the cyanotic anesthetized blood and removable by a stream of oxygen.

What is this product? All previous authors (except Ulbrich) were unable to demonstrate any change in the spectroscopic readings. Our first spectroscopic determination on the blood of five dogs during anesthesia, taken in the usual way by mixing a few drops of blood with salt solution in a chamber, showed nothing but lines of oxyhemoglobin. Our second set of experiments, however, on three dogs deeply anesthetized, showed lines of reduced hemoglobin. This was accomplished by preventing the oxidation of the hemoglobin by collecting the blood under oil, with a canula immersed in salt solution. By very high dilution the lines of oxyhemoglobin were obtained. These results show very clearly that the product which causes the high Dare reading is reduced hemoglobin.

We find further that this reduction in hemoglobin is not due to the anesthesia *per se*, but to the acompanying asphyxia—note the differences in the hemoglobin reading under the nitrous oxid-oxygen mixture as contrasted with the nitrous oxid-air mixture (Table 5)—as well as the disappearance of the blue reduced hemoglobin under a stream of oxygen and the inability to produce same with nitrous oxid alone.

The explanation of the high red count under gas is still an open question, except from the standpoint of the possible explanation of a local capillary stasis. The drop in hemoglobin to normal as soon as the mask is removed is made clear on the basis of the removal of the high-reading reduced hemoglobin by oxygenation. The drop continuing to below normal remains unexplained. That this is of little consequence is strikingly shown by the fact that in two hours all the readings are equivalent to those before anesthesia. Were they of moment they would not come back so quickly.

We investigated further the question of hemolysis and increased red cell regeneration by a series of smears before and after anesthesia, looking especially for nucleated reds; by examination of the urine for urobilin; by an examination of the plasma in the hematocrit tube for blood coloring matter; all of these examinations resulted negatively; no definite evidences of hemoglobin or increased hematopoietic activity could be found.

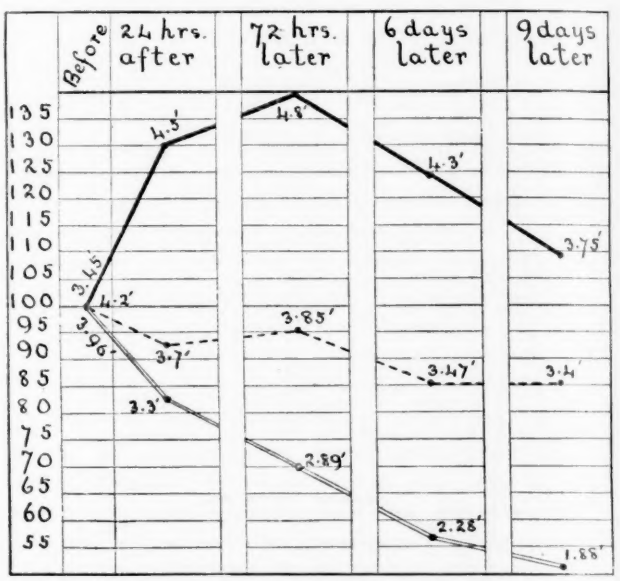

Fig. 4.—Curve showing effect of nitrous oxid (solid line), chloroform (broken line) and ether (double line) anesthesia on the coagulation time of the blood. Summary of results of twenty-five animal experiments (Tables 13, 14 and 15).

Finally, therefore, we conclude that nitrous oxid anesthesia does not reduce hemoglobin and thereby cause anemia; that it does not cause increased hemolysis; that what apparent change it does produce on hemoglobin and red cells is transient and of no clinical significance.

CHANGES DUE TO ETHER ANESTHESIA.

(*a*) *Literature.*—The first specific examination for blood changes due to ether anesthesia appeared in 1895 (although Bierfreund,[18] reporting from Mikulicz's clinic in 1890, found a hemoglobin destruction of from 5 to 10 per cent.) when DaCosta examined the blood of twenty-seven operative cases, before, during and after etherization.[19] He concluded that etherization produces a marked diminution in the hemoglobin of the blood and caused an alteration in the morphology of the red blood corpuscles with no decrease in their numbers. Further,

18. Langenbeck's Arch., 1890-91, xli, 1.
19. Med. News, March 2, 1895.

that blood previously diseased—in anemic individuals—is especially susceptible.

Buxton,[20] in 1896, found destruction of corpuscles and liberation of hemoglobin when shaking blood with ether, and thinks that a similar, although less marked phenomenon occurs in the body. Oliver,[21] the same year, saw the necessity of controlling the above observations on animals and from observations on rabbits anesthetized for an hour with ether found no changes in normal red corpuscles, but admits it may affect those already diseased.

The following year von Lerber[22] reported a study of the blood in 101 cases after the inhalation of ether. He found that in most cases the hemoglobin was unaltered; that the red blood corpuscles were morphologically and numerically unchanged, and that spectroscopic urinary examination for urobilin was negative, concluding that there was no hemolysis and liberation of hemoglobin.

In 1889 Hamilton Fish,[23] theorizing from examination of patients' blood before and during anesthesia, states that ether reduced hemoglobin and exerted a harmful effect on red blood corpuscles.

In 1901, from an exhaustive study of the literature and 50 operative cases, DaCosta and Kalteyer[24] concluded as follows: "The number of red corpuscles is influenced by many factors accompanying the anesthetic state. The character of this change is, as a rule, a polycythemia—rarely an oligocythemia. The nature of this polycythemia seems best explained by a lessening of the watery elements of the plasma. It seems reasonable to infer that the polycythemia is not influenced by excessive proliferative changes which probably occur in the hematopoietic tissues. The three important factors incident to polycythemia are, (a) the period of preparatory operative treatment, viz., hot bath, active purgation, etc.; (b) the anesthetic state—particularly sweating; (c) postoperative stage—particularly vomiting. The blood inspissation is, as a rule, most pronounced immediately after the termination of the anesthetic stage. The hemoglobin is always reduced absolutely. We conclude that etherization produces increased hemolysis and in Nature's effort to rapidly replace the degenerated corpuscles, the regenerated cells are imperfectly supplied with hemoglobin."

Anders and Boston,[25] in 1904, confirmed the fact that ether produces increased hemolysis, but find that it is followed by rapid regeneration of cells, with an increase in the number of red corpuscles. Dawson,[26] in 1905, came to the same conclusions.

(*b*) *Changes in Hemoglobin, Erythrocytes, Color and Volume Indices in a Series of Experimental Animals Under Ether Anesthesia.*—Ether was administered to five dogs on different days, the time of anesthesia varying from fifteen minutes to two hours and twenty-eight minutes. Table 9 shows the readings of the various blood components. The last group of figures is an average of the five sets above (Chart 2).

The hemoglobin reading taken during anesthesia shows an increase which remains high until the fifth to the seventh day, and on the eighth to the tenth day shows a slight drop of 3 per cent. This is in marked contrast to the N_2O readings where the hemoglobin dropped immediately and came back to normal in twenty-four hours.

The red count shows a rise immediately after anesthesia which persisted high until a gradual decline to normal on the eighth to the tenth day. This, again, is in contrast to the N_2O count where the apparent polycythemia disappeared in two hours.

The color index shows a rather constant drop, starting immediately after anesthesia and reaching its lowest point on the fifth to the seventh day. This would indicate a relative loss of hemoglobin per cell, and again is unlike nitrous oxid results, where the only sign of a low color index is found immediately after the anesthetic mask is removed, and which is completely gone in two hours.

The volume index likewise shows an immediate loss, which is most marked in twenty-four hours, and again on the fifth to the seventh day. In the nitrous oxid readings the percentage volume remained unchanged throughout.

These results show that ether administered to experimental animals caused: (1) An increase in the hemoglobin persisting until the eighth to tenth day; (2) an increase in the number of erythrocytes persisting with slight remissions until the eighth to tenth day; (3) a loss in the relative amount of hemoglobin, most marked on the fifth to seventh day; (4) a loss in the percentage volume, most marked on the fifth to seventh day.

The apparent polychromemia and polycythemia are well explained by the anhydremia or inspissation mentioned by DaCosta and Kalteyer. The continued abstraction of the watery elements of the plasma would explain the loss in volume of the red cells due to shrinkage, the return to normal volume and normal cell count occurring synchronously. The loss in the relative amount of hemoglobin can only be explained as a true oligochromemia. This agrees with the ideas of Bierfreund,[18] DaCosta and Kalteyer,[19] Buxton,[20] Fish,[23] Anders and Boston[25] and Dawson.[26]

THE CHANGES DUE TO CHLOROFORM ANESTHESIA.

(*a*) *Literature.*—Harley,[27] as early as 1864, investigating the effect of chloroform on the blood, described various degrees of red blood cell disintegration. Guthrie,[28] in 1897, brings forth corroborative evidence and quotes the work of Ostertag, McKendrick, Sansom, Wittich and Bottcher as supporting Harley's findings.

Solimeii,[29] in 1902, found a decrease in hemoglobin and erythrocytes and moderate poikilocytosis after chloroform narcosis. Holman[30] discusses danger of chloroform hemolysis in anemic blood. Dawson,[31] in 1905, however, takes a view opposite from the above and quotes several observations to the point that chloroform produces only slight hemolysis and does not materially reduce hemoglobin.

(*b*) *Changes in Hemoglobin, Erythrocytes, Color and Volume Indices in a Series of Experimental Animals Under Chloroform Anesthesia.*—We investigated the effect of chloroformization on five dogs varying from eighteen minutes to two hours and forty-five minutes (Table 12, Chart 3). The hemoglobin per cent. shows a rather unusual change in the high reading on the day after anesthesia. The most significant fact, however, is the late fall in hemoglobin to 8.4 per cent. less than the

20. Lancet, Feb. 1, 1896.
21. Lancet, June 27, 1896.
22. Centralbl. f. Gyn., 1897, 19.
23. Ann. Surg., July, 1899.
24. Ann. Surg., 1901, 34, 329.
25. Lancet, June 1, 1904.
26. Edin. Med. Jour., November, 1906, 26.
27. Trans. Roy. Med. Chir. Soc., 1864, p. 159.
28. Clin. Jour., March 24, 1897.
29. Gazz. d. osp. e. d. clin., 1902. xxiii, 108.
30. St. Paul Med. Jour., 1902, ix, 618.
31. Loc. cit.

start. This is in contrast to the 1.1 per cent. fall under nitrous oxid and the 3 per cent. fall under ether.

The red cells show the same unusual rise in the twenty-four hour reading, following the hemoglobin curve. The absolute number is, however, relatively decreased on the seventh to tenth day. This again is to be compared to the slightly increased number found in the late readings of nitrous oxid and ether.

The relative amount of hemoglobin—color index—remains little altered throughout the readings. In general there is a slight reduction throughout, which is most marked in twenty-four hour column. The volume index is also of little interest, showing the greatest reduction in the twenty-four hour reading, when the cell count is the greatest.

We may interpret the above as showing that chloroform administered to experimental animals causes (1) a temporary rise in hemoglobin, followed by a diminution to below the normal, most marked in the seventh to tenth day; (2) a temporary increase in the number of erythrocytes followed by a decrease to below the normal, most marked on the seventh to tenth day; (3) little alteration in the color and volume indices.

The temporary polychromemia and polycythemia are explained by the anhydremia similar to the change from etherization. This has been noted clinically by King.[32] The late oligochromemia and oligocythemia are significant, however, and must be interpreted as due to blood destruction, agreeing with the observations previously quoted, excepting those of Dawson.

EFFECT OF NITROUS OXID, ETHER AND CHLOROFORM ANESTHESIA ON THE COAGULATION TIME.

The study of the coagulation time of the blood in relation to general anesthesia was undertaken because of the possible light it might throw on the question of postoperative thrombosis after clean surgical operations. It was made both clinically and experimentally. The experimental work on dogs was done so that all other factors, except the anesthetic—such as loss of blood, traumatism, etc.—might be eliminated. The clinical study was made on fifteen patients anesthetized with nitrous oxid and twenty-five with ether. The experimental work was done on five dogs anesthetized with nitrous oxid, five with chloroform, and fifteen with ether. The discussion will be divided into two parts, clinical and experimental.

Effect of Nitrous Oxid Anesthesia.—This study was made on fifteen cases from Dr. Bevan's surgical clinic (Table 11). The coagulation time was taken before anesthesia, twenty-four hours after, and on the third, sixth, seventh and tenth to fourteenth days after anesthesia. Care was taken to select cases in which there was no known factor present which would change the coagulation time. Case 8 is an exception to this, however, for on the third, fourth and fifth days after operation, he was given 60 grains of calcium chlorid daily per rectum.

A study of Table 11 shows that the average time of anesthesia was 24.8 minutes. Of the fifteen cases, 9 (60 per cent.) showed a rise in the coagulation time of the blood, 4 (26⅔ per cent.) showed practically no change, while 2 (13½ per cent.) showed a fall in the coagulation time. One of these two was the case in which calcium chlorid was given. The average of the fifteen cases shows the coagulation time before anesthesia to be 6.36 minutes. This rises and on the third day after anesthesia is highest, being 7.19 minutes or an increase of 13 per cent. By the sixth to seventh day this has fallen to 6.76, and by the tenth to fourteenth day to 6.69, which is slightly above what it was before anesthesia. It appears from these cases that nitrous oxid anesthesia does not cause a constant change in the coagulation time, but that in general it causes a rise, which is not great (13 per cent.), most marked about the third day, approximating normal by the tenth day.

Effect of Ether Anesthesia.—Twenty-five cases were included in this series. Coagulation time was taken as in the previous series and results are shown in Table 12. The average duration of anesthesia was 54.9 minutes. Of the twenty-five cases, twenty-three showed a decrease in the coagulation time, while only two showed an increase, and that only slight. The average coagulation time before anesthesia was 7.04 minutes. This falls slightly up to the third day after anesthesia, and then falls rapidly until by the seventh to tenth day it is only 4.16 minutes—a fall of slightly over 40 per cent. By the eleventh to eighteenth day it has risen to 6.1 minutes, but is not quite back to normal. Thus it appears that ether causes marked reduction in coagulation time, greatest seven to ten days after anesthesia.

When these results are compared to those obtained after nitrous oxid anesthesia a marked difference is seen. In nitrous oxid anesthesia the change was not constant and consisted, in general, of a slight rise, while in ether an almost constant drop in the coagulation time occurs, which is very marked, averaging about 40 per cent.

EFFECT OF NITROUS OXID ETHER AND CHLOROFORM ANESTHESIA ON THE COAGULATION TIME.

In these experiments five healthy dogs were used in each series. In addition to the five dogs which were given the anesthetic alone, ten more were included in the ether series, five of which had the peritoneum opened and packed with wet sponges and five opened and packed with dry sponges. These are included because they show the same changes that occur when only the anesthetic is given.

A study of Table 13 shows that the same result was obtained on dogs who were given nitrous oxid without operation as was obtained on the clinical cases (Table 11). The average coagulation time was increased from 3.45 minutes before anesthesia to 4.8 minutes after anesthesia. One case showed a slight decrease in the coagulation time. These are very similar to the clinical results and confirm them.

In like manner the experiments on dogs with ether showed the same change in the coagulation time that had been observed clinically. The average coagulation time is lowered from 3.96 minutes before anesthesia to 1.88 minutes by the seventh to tenth day—a change of 52 per cent.

In regard to chloroform, no clinical data were obtainable because this anesthetic is seldom used in the Presbyterian Hospital. For this reason only the animal experiments can be included in this report. The results of these experiments are shown in Table 15. Four of the five dogs showed a decrease in the coagulation time, one dog an increase. The average shows a decrease from 4.2 minutes before anesthesia to 3.4 minutes on the seventh to tenth days—a change of 19 per cent. This is seen to be similar to the changes under ether anesthesia, though not so marked (Chart 4).

In general, we may say that the animal experiments

32. Am. Jour. Med. Sc., 1902, 124, 450.

confirm the clinical studies, as the results are practically the same. From these clinical findings and animal experiments we conclude therefore that:

(1) The changes produced in the coagulation time by nitrous oxid anesthesia are not constant, but, in general, it causes an increase which is slight.

(2) Ether anesthesia produces a marked decrease in the coagulation time of the blood.

(3) Chloroform also produces a decrease in the coagulation time, which is, however, not so marked as that produced by ether.

It has not been shown that the change in coagulation time has any relation to thrombosis after operation. This question will be taken up in a subsequent report by one of us (Ewing), but if such relation does exist, as is probable, the presumption is that thrombosis would be less apt to follow gas than ether or chloroform.

SUMMARY AND CONCLUSIONS.

1. In an analysis of the blood changes incident to nitrous oxid anesthesia in a series of clinical and experimental observations we find that:

(a) The hemoglobin is not permanently reduced nor is anemia produced.

(b) Hemolysis is not increased.

(c) The changes in the readings of the hemoglobin and erythrocytes are transient and of no surgical significance, and are most likely to be explained on the basis of capillary stasis. The production of reduced hemoglobin is not a result of the anesthetic itself, but is due to the accompanying asphyxia.

(d) The changes in coagulation time are not constant, but in general there is an increase in the time required for clotting most marked about the third day.

2. In an analysis of the blood changes incident to ether anesthesia in a series of experimental observations we find that:

(a) The hemoglobin is slightly reduced and therefore a slight anemia is produced.

(b) Hemolysis is not materially increased.

(c) The changes in hemoglobin and erythrocytes are to be explained on the basis of blood inspissation.

(d) It causes a marked decrease in the coagulation time, most marked from the seventh to tenth days.

3. In an analysis of the blood changes incident to chloroform anesthesia in a series of experimental animals, we find that:

(a) The hemoglobin is reduced, and therefore an anemia is produced.

(b) Hemolysis is increased.

(c) It causes a slight decrease in the coagulation time, most marked in the seventh to tenth days.

4. In a comparison of the three anesthetics from the standpoint of the blood changes we conclude that nitrous oxid causes no permanent effects of any significance: that ether causes more harmful changes (slight anemia and marked decrease in coagulation time); that chloroform causes the most harmful results (hemolysis and production of distinct anemia).

We wish here to express our appreciation to Dr. Bevan for his interest and encouragement throughout the progress of this work, and to Dr. S. A. Matthews for his generous aid and assistance, without which many of the animal experiments could not have been performed.

NOTE: Accompanying this paper are 15 tables giving details of the experimental observations on the blood changes. On account of lack of space, these tables are omitted from THE JOURNAL, but will appear in the Transactions of the Section on Surgery and Anatomy, and in reprints of the Report of the Committee on Anesthesia. A copy of the latter will be sent by THE JOURNAL of the American Medical Association on receipt of a two-cent stamp.

THE EFFECTS OF QUEBRACHIN ON THE LUNGS.*

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In 1879 Penzoldt called attention to the extraordinary increase in respiratory activity following the administration of *Aspidosperma quebracho-blanco*. Wood and Hoyt[1] have confirmed these observations, the amount of air breathed in some of their experiments being increased nearly 400 per cent. In this communication it was shown, however, that the drug was so active a depressant to the circulation as to preclude its utility as a clinical respiratory stimulant. With a view to determining whether the effects on the respiration and circulation might not be due to different alkaloids, so that one could be of value to practical medicine, I have recently undertaken the study of the individual alkaloids from quebracho furnished by Merck & Co.

There are contained in quebracho bark at least six alkaloids, namely: aspidospermin, aspidosamin, aspidospermatin, quebrachin, quebrachamin and hypoquebrachin. I have experimented with all of these except aspidospermatin and hypoquebrachin. The only one, however, which merits any detailed consideration is quebrachin; the others I shall dismiss with few words.

Quebrachamin in small doses caused a slight elevation of the blood pressure without much change in the respiration. After larger doses the rise in the blood pressure was marked and there was also a noteworthy acceleration of the breathing, but in such quantities it gave rise to violent convulsions, probably of cerebral origin. Aspidosamin has some stimulant action on the respiration, but is much more active as a circulatory depressant: the lowering of the blood pressure which is observed to follow the injection of the crude drug I think may justly be attributed to aspidosamin. Aspidospermin in moderate doses increased to a limited extent the breathing without seriously affecting the circulation, but in overdose caused respiratory depression and convulsions. Quebrachin is the most important respiratory poison in the plant. It causes an enormous increase both in the depth and rate of respiration. The effects on the circulation, while at times well marked, were variable and subordinate to the action on the respiration.

The increase in the respiratory activity caused by quebrachin I have never seen paralleled by any drug either in degree or duration. With a view of determining its practical value, I made a number of experiments to see how far it would counteract the effects of respiratory depressants. In these I found that after moderately large doses of either morphin, hydrated chloral or ether the drug caused a distinct increase in the breathing, but in several experiments where the dose of the depressant had been large enough to produce dangerous depression of function the administration of quebrachin was followed by an immediate cessation of respiration.

The most interesting fact in connection with this drug, however, is the marked pathologic changes in the lungs which were observed. In some cases, apparently more frequently after small doses or when the drug had been administered hypodermically, the lungs were found

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Univ. Penna. Med. Bull., September, 1903.

postmortem to be simply paler in color than normal, but the typical changes which were observed in greater or less degree in every instance in which the respiration was greatly increased consisted in sharply localized areas of intense congestion scattered throughout a generally anemic lung. These congested areas varied in color from the redness of freshly-cut liver to a deep purple, almost black hue, and in size from areas of a few millimeters in diameter to almost the complete surface of one lobe of the lung. Many of these spots appeared to the naked eye to be certainly hemorrhagic. Although they were generally most marked in the dependent portions of the lung, they were irregularly distributed in all portions of all lobes of the lung. The areas of congestion were much more marked on the surface than through the organ generally, and when section was made the surface congestion extended about five millimeters into the lung substance. If from one of these areas, which from color and general appearance strongly suggested hemorrhage, a piece were cut out, while it floated boggily in water, its specific gravity was evidently greater than that of the non-congested areas of the lung. Through the lung there was frequently more or less evidence of edema, although this was never of a very marked type.

Prof. A. J. Smith kindly examined for me, microscopically, sections from the congested areas of several lungs. They showed scattered areas of atelectasis, marked dilatation and engorgement of the capillaries, some serum in the air spaces, but no real hemorrhagic conditions could be diagnosed with certainty.

Several possible explanations of these changes suggest themselves. The most obvious thought is that they were due to the violence of the respiratory activity. That this was not the case is shown by the fact that they occurred in curarized animals with artificial respiration. That they were not due to changes in the blood nor in the vessel walls was shown by the fact that the blood clotted with normal firmness and that they could not be observed, despite repeated search, in any other organ of the body.

Another conceivable cause is a violent spasm of the pulmonary capillaries offering so much resistance to the passage of blood through the lungs that the weaker vessels gave way before the pressure. To determine the possibility of this theory I made studies of the pulmonary blood pressure, and although I found that the pressure in the pulmonary circulation was slightly increased by quebrachin, the rise was insignificant, distinctly less, for instance, than that which is caused by nitroglycerin and entirely insufficient to justify such a theory.

The only other explanation which offers itself to my mind is that of a specific local influence on the pulmonic tissue, which for lack of a better word we may call irritant. It must be said, however, that the solutions employed were not, in the ordinary sense of the word, irritating: that is, when injected hypodermically, either into a dog or frog, there was no visible sign of a local inflammation, nor when placed on the tongue did they provoke any sensation beyond the taste of bitterness.

I am inclined to the belief, although the matter can not be considered distinctly proved, that the increase in the activity of the respiration is a secondary result of the pathologic changes, or, more properly speaking, is the result of the same influence which gives rise to these alterations. In the first place, there has as yet been forthcoming no satisfactory explanation of the violent dyspnea. True, we may attribute it to a direct action on the respiratory center, but the increase in respiratory activity is so disproportionate to that caused by any of the ordinary stimulants of this function that one naturally seeks for some other explanation; especially is this the case when we find that after large doses of the respiratory depressants the administration of the drug apparently adds to, rather than lessens, the embarrassment.[2] Moreover, there seems to be more or less constant relation between the severity of the changes and the degree of respiratory augmentation. Thus, in several experiments in which for one reason or another the breathing was no more violent than normal, the lungs were found to be simply anemic with no evidence at all of congestion or hemorrhage, and in cases in which the respiratory activity was only slightly exaggerated the congestive lesions were comparatively slight.

It would appear probable, therefore, that quebrachin (similar changes have been caused by quebrachamin and aspidospermin) irritates in some way the mucous membrane of the lungs, giving rise to localized congestion, and through irritation of the sensory nerve endings reflexly to an enormous increase in the respiratory activity.

THE EAR SYMPTOMS OF CARDIOVASCULAR DISEASE.

WITH SPECIAL REFERENCE TO LOW PRESSURE CASES.*

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As a practitioner of late years devoted to the study of cardiovascular disease, I esteem it a privilege to bring to the Section on Laryngology and Otology my conclusions on this very important topic. I expect to receive in return the knowledge that has come to a set of men who have studied the matter from a different point of view.

The ear symptoms of cardiovascular disease may be believed to be such, when they have developed coincidently with circulatory disorder, and when they are not the manifestation of disease of the ear itself. The decision on this point must be the outcome of careful study on the part of the specialist in circulatory disease with the cooperation of the aurist, and the final criterion must be the result of therapeutic measures.

I am conscious of the fact that tinnitus aurium is a condition that is ever pressing on the attention of the aurist and has always been one of the hardest symptoms to relieve. For that reason, if some other department of medicine is willing to assume the responsibility of a few of these cases to that extent is otology relieved. Already a certain number of cases have been relegated to that depository of ignorance which is labeled "neuroses," and the symptom has been decided to be of nervous origin and not dependent on structural defect in the ears. That a certain number are due to circulatory disease seems to me to be suggested by the fact that audible murmurs are often heard in the circulatory system in cases of anemia and relaxed blood vessels.

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2. The theory of Penzoldt that the drug lessened the oxygen carrying power of the blood has no scientific support, and the studies of Wood and Hoyt render it highly improbable.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Indeed, several observers have discussed the significance of murmurs that are heard by cerebral auscultation. In an elaborate article sixty-five years ago, Dr. S. S. Whitney[1] describes the murmurs heard on auscultation of the head and, and since his time other observers have discussed this topic. That there are certain circulatory sounds that are a great annoyance to the patient and that can also be heard by the physician, while not of frequent occurrence, still has occurred in the experience of nearly everyone. In such a case we would not blame the ears as the source of the sound. It is reasonable to suppose that some of the sounds heard by the patient alone are similar in origin, and it has been my good fortune in a few instances in which these sounds were believed by me to be due to circulatory disease to observe the removal of the symptom when the circulatory condition was improved. While I have seen this both in high and low tension cases, the most striking have been in the low tension cases. To quote from Wood's Reference Handbook of the Medical Sciences:

> Subjective ear noises, are said by Politzer, to occur in two-thirds of all ear cases, and are probably due in true ear cases to pressure and irritation of the nerve endings in labyrinth. Ear noises are variously described as singing, ringing, blowing-off steam, hissing, rushing, roaring like the waves of the seashore, certain musical notes, clicking or voices. In some cases the noises are heard only during perfect silence, as after retiring or when the patient is fatigued or during a "cold," or when his general condition is below par.
>
> Noises are more common in the sclerotic form of chronic middle ear catarrh than in the chronic suppurative conditions. In the sclerotic cases the tinnitus is frequently described as a singing or a blowing sound, and here it often precedes the deafness by many years, if indeed the latter ever follows. Tinnitus may occur in cases of aspergillus or of impacted cerumen, or it may follow the use of quinin or the salicylates. When it is due to drugs it is evanescent and probably is caused by anemia of the labyrinth. If the noises are diminished by compression of the carotid artery they are probably caused by congestion of the arterioles in the middle or external ear, and in such cases they are often synchronous with the pulse.
>
> The clicking or crackling forms of noises are generally due to spasm of the tensor tympani or the stapedius muscles. In a certain number of cases these noises may be heard by the examiner as well as by the patient. When the subjective sounds are sustained musical notes they usually represent the high A of Beethoven. Hysterical patients may describe the subjective musical sounds as "entire operas." Voices are rarely heard except in insanity. A small epithelial scale attached to the drum membrane has at times been the sole cause of distressing subjective noises. When the tinnitus intermits the prognosis is more favorable than when it is constant.

It would seem to me that each case should be analyzed according to the relations of three classes of causes. Naming these in the order suggested by my own point of view, I would say: First, an increase in the noise of the circulation just as there is an increase in the noise of a railroad by loose rails or flat wheels. Second, an increased sensibility of the auditory nerve apparatus, whereby the physiologic noise of the circulation becomes the subject of a conscious appreciation. Third, disease of the ear itself outside of the nerve apparatus stimulating this nerve and inciting its characteristic impression just as a blow on the eye produces the sensation of light. The situation is complicated because we must analyze these three elements and in many cases all three are active, but from this it is fair to suppose that when we influence one of them and there is an improvement in the symptoms that we have controlled a part of the trouble. There is no fact that I have heard more often in my dealings with otologists than that tinnitus aurium is dependent in its severity on the patient's general condition, and there is no fact more certain than that the circulation is dependent on the general condition.

Great advance has been made of late years in the appreciation of the circulatory problem in disease. For many years high pressure cases were studied. Now low pressure cases are becoming better understood. I would place among the most important advances in my knowledge of recent times the appreciation of the fact that weak circulation so often met with in severe disease is more often a matter of vasomotor deficiency than of heart weakness. The heart is usually competent to carry on the circulation provided the condition of the peripheral vessels can be properly controlled.

There are three great important locations of vasomotor control; in the medulla and brain, in the spinal cord and in the blood vessels themselves. The first to fail in severe disease is that in the medulla, and recently it has seemed to me that I have studied cases of penumonia in which the vasomotor control has been transferred from the medulla to the other two locations. In the low tension of the type in which circulatory ear symptoms were manifest, there seemed to me to be a combination of rather general vasomotor insufficiency, and a degeneration of the heart muscle. In other words, a weak heart in which compensatory constriction of the peripheral vessels had not taken place.

In this connection I should like to call attention to a paper by Dr. John J. Kyle[2] of Indianapolis on "A Study of Ear Symptoms in Arteriosclerosis with Special Reference to the Labyrinth." He refers to progressive loss of bone conduction, which he believes to be coincident with the development of arteriosclerosis. The article is so good that I should like to quote it in full in this connection, but it is a little aside of my own central idea, which has special reference to low pressure cases. He says in part:

> The ear symptoms which should direct our attention to a local or general circulatory disturbance, are unilateral or bilateral tinnitus, slight and progressive deafness, loss of air and bone conduction, dizziness sometimes early in the disease and in the later stages of the disease, sometimes hallucinations of hearing. The ear symptoms necessarily vary according to the extent of the sclerosis. It is well known that in severe hemorrhage and progressive anemia, deafness and tinnitus may occur. If the hemorrhage and anemia are severe and prolonged, deafness may be permanent, being due to an obliteration of some of the blood vessels of the cochlea or the special cochlea center in the brain. A passive tinnitus or a passive dizziness is probably due to a circulatory disturbance in the arteries of the semicircular canal or special centers of equilibration. These conditions are frequently attributed to liver disorder, rather than a valuable symptom of a possibly beginning general arteriosclerosis. A deafness without dizziness, tinnitus or Ménière's syndromes (providing no mechanical cause of deafness exists), with some general symptoms of arteriosclerosis, is indicative of thickening in vessels to the nucleus, and if associated with peripheral paralysis, may be indicative of disease of the internal capsule. Loss of hearing with dizziness may be due to a vascular disorder from tumors in the cerebrum, cerebellum or pons varolii, as well as to a sclerosis of the labyrinthine artery. Loss of hearing and dizziness continuing for a long time, are valuable signs of vascular disturbance in the entire encephalon. If the eye symptoms are also present, the evidence is complete.

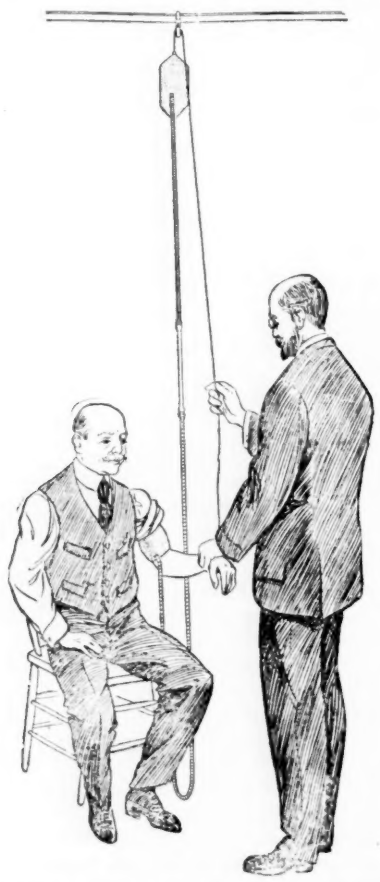
He also remarks earlier in the paper what I find to be true that:

1. American Journal of Medical Sciences, 1843.

2. Ann. of Otol., Rhinol. and Laryngol., June, 1907.

Otologic literature is singularly quite barren in regard to ear symptoms in arteriosclerosis. . . . I can accentuate an opinion quite freely expressed and believed, that many ear symptoms, too often considered as purely local, are the local expression of a general disease. Therefore, a tinnitus and slight deafness, with slight loss of bone conduction, may be of far deeper significance than simply disease of the perceiving apparatus, and for this reason we should go deeply into the etiology of slight deafness, possibly blocking thereby the march of a general disease, which ultimately may harass, if not annihilate the individual.

I find the literature on this subject is very scanty and I attribute it to the fact that the critical study of the circulation as contrasted with the study of the heart alone has not been general up to the present time. The question of low arterial tension has been particularly neglected, and the tendency has been to omit from consideration the physiologic condition of the blood vessels, while paying undue attention to their physical condition. The mistake has been made of always attributing an over-abundance of blood in a part to high blood pressure, while in fact relaxation of the blood vessels is a frequent cause. Murmurs are produced not by a constriction as such, but by a relative constriction, and a relative constriction can be brought about by dilatation, which causes the normal part of the vessel to act as a constriction. From this it is easy to understand why relaxed vessels produce a great deal of noise.



Detecting low blood pressure by the author's hydrostatic method.

In a recent article, Dr. Alfred Stengel[3] says:

All of these symptoms will be recognized as occurring in the group of conditions caused by compression of the carotid arteries and also among the manifestations of gross cerebral thrombosis. When one or the other occurs as a more or less isolated symptom in a case of arteriosclerosis, one hesitates to regard it as due to this cause alone, and very properly inclines to think it a part of some more definite focal, cerebral or visceral condition not yet fully developed. In many instances further symptoms may occur, and a cardiac, gastric, aural or local cerebral cause may be recognized. Sometimes, however, such symptoms recur repeatedly and no further developments take place until perhaps with increasing cerebral sclerosis more distinct results follow.

Dr. W. Sohier Bryant, in an article on "Tinnitus Aurium," says: "Bilateral equal tinnitus indicates a constitutional cause, while bilateral unequal tinnitus located in the two ears indicates a local cause." Tinnitus with defective hearing may naturally be concluded to come from the ear itself. Circulatory tinnitus is frequently synchronous with the pulsation of the heart, but not always so.

There is no class of individuals subject to more supposed local disease than those who suffer from a constitution of low arterial tension. This is a condition which I first described[4] in 1904, and which refers to certain types of circulation. To quote a brief description from my own little book on "Heart Disease and Blood Pressure:"

It will be found that there are many patients who give evidence, on the most casual examination of the circulation, that the tension in the arteries is very slight, and in some this will be found a constant condition. It is surprising how little tension there can be in the radial pulse without the patient suffering from any symptoms of circulatory disease.

This low arterial tension in otherwise apparently healthy individuals is undoubtedly a departure from the normal. It may be due to an unusual relaxation of the peripheral circulation which makes it possible for the heart to do its work with but little effort. Some of these patients are generally feeble, lacking in nerve force and unequal to strains. Others, however, seem to respond to demands for physical or nervous effort, and when so responding there is an improvement in the tone of the circulation.

When seen for the first time during some acute affection, this condition may give rise to apprehension on the part of the physician as to the outcome of the illness for which he has been summoned. When, however, the patient can be watched from year to year and is seen to get along perfectly well, even though there is this lack of tone in the circulation, the physician comes to realize that with that individual it is a physiologic condition.

There is another form of low blood pressure that is much more dangerous, and that is the relatively low blood pressure which succeeds the high arterial tension of chronic Bright's disease. Here we have to deal with a most serious complication of the disease. It means that the circulation is no longer maintained by the heart. Thus, it may be stated, that low arterial tension may exist in certain individuals without great significance, but that if it has been preceded by high arterial tension it is a factor of grave import. With this condition we have nothing to do in the present discussion, but rather with low arterial tension that is a reflex of a constitutional condition.

Experience has shown that nothing is gained with these individuals by the use of drugs to increase arterial tension. It is quite possible to make the pulse for the time being approximate the normal; indeed, this often happens spontaneously when the heart and circulation are physiologically stimulated by exercise or fever.

The condition is, in all probability, due to an inherent defect in the nervous system, whereby it does not exercise the proper control over the blood vessels. The same patients who suffer from this low arterial tension are very apt to manifest other symptoms of defective nervous control, and the removal of the underlying condition will bring about an improvement in the circulation.

3. Vertigo, Temporary Aphasia, Ocular Disturbance and Tinnitis with Cerebral Arteriosclerosis, Am. Jour. Med. Sci., February, 1908.

4. New York Medical Journal, June 11, 1904.

The most important element of treatment is systematic exercise. These patients are often dependent for their well-being on regular physical exertion. Often they feel much better if they can take a brisk horseback ride every day, or some other form of stirring exercise. There are other cases in which it is found that iron and arsenic improve the condition when it becomes very marked. In still other cases very hot baths take the place of vigorous exercise and improve the tone of the circulation. It should be remarked that this is a secondary effect, because, if the circulation be examined immediately after the bath, it will be found to be more relaxed than usual.

Although one would expect beneficial results from cold bathing, it is found by experience to be unsatisfactory in cases of constitutional low arterial tension. Such subjects do not react, and the effect is not satisfactory.

These observations refer to a class of patients who are not suffering from any definite disease, but who realize that they are not the same as other people. They have probably been told that they are suffering from a variety of diseases, according as the phenomena were supposedly traced to one or the other organ. To them may be applied the rather trite remark that they are suffering from a condition rather than a disease, and such patients are fortunate if they come under the care of a practitioner who will appreciate this fact. The worst thing that can happen is that there should be repeated efforts to cure supposed disease by different men succeeding one another.

In this class of cases I have found ear symptoms consisting of a sense of fulness with slight tennitus at times which has cleared up entirely under the regular régime. A typical case of acquired low arterial tension was as follows:

History.—E. B., a woman, aged 50, consulted me five years ago, complaining of the following symptoms: She had been in good health until about a year previous, when she commenced to run down, feeling unable to undertake much physical exercise, losing her breath on exertion and as she expressed it "did not digest her food well." For the past three or four months she had had a puffing sound in her ears, which she described as synchronous with the pulse.

My clinical diagnosis from physical examination and laboratory findings coupled with the history, was myocarditis with relaxed peripheral blood vessels.

Treatment.—This patient's symptoms were relieved by sodium iodid and digitalis, with attention to diet, graduated exercise and hydrotherapy. Her condition was so improved that under supervision she has gone on ever since with only an occasional return of her symptoms.

The number of patients with ear symptoms that come to me as a cardiologist is naturally very much smaller than would fall into the hands of the otologist. I am particularly interested in the discovery of low pressure cases with ear symptoms, and during the three or four months before I have to read this paper I am going to ask some of my friends among the aurists to examine all their cases as to blood pressure with the hydrostatic machine devised in my laboratory that makes these observations very simple.[5]

In conclusion, I am led to believe that:

1. There are certain cases of tinnitus aurium which are a local manifestation to general circulatory disorder.

2. This may have its foundation in arteriosclerosis, but the blood-vessel disorder is often, in a large measure, functional.

3. It is found in connection with high blood pressure and also with low blood pressure, and while in both instances the symptom is relieved by measures which regulate the circulation, the most striking results of treatment are to be obtained at the present time in instances of low arterial tension.

4. Observations of blood pressure to detect the gross departure from normal should be made by otologists; they can be made in a very few seconds by the author's simplified method.

54 West Fifty-fifth Street.

5. See article on "Arteriosclerosis," Wood's Reference Handbook of the Medical Sciences, Revised Appendix, 1908.

ABSTRACT OF DISCUSSION.

DR. J. A. WHITE, Richmond, Va.: Little importance has been laid on variations of blood pressure as a causative factor in the production of tinnitus. I doubt if any reference can be found to the effects of low tension, except the venous hum, found occasionally in anemia, and more especially in those cases which are supposed to have an abnormal displacement of the bulb, upward and forward towards the tympanic cavity, and the noisy pulsation of the carotid, when it is displaced upward and backward toward the drum. In such cases, however, the abnormal perception of the vascular sounds may be due to hyperesthesia of the labyrinth, just as there is hyperesthesia of the retina in some cases of photophobia without any apparent pathologic change. Tinnitus may be due to any interference with the function of the sound-perceiving apparatus, or to any changes about the sound-conducting apparatus; or, in the absence of either of these conditions, it may be due to reflex cause, as, for instance, a spur in the nose. Why should the ear be exempt from the pernicious effects of long-continued alteration in the blood pressure, even when there are no other decided symptoms of cardiovascular disease? Is not the renal complication of such a condition often its result rather than its cause? Osler thinks that this is so in many cases.

Lithemia sometimes brings about contraction of the circulation resulting in hyperemia or ischemia with venous stasis. If the sound-perceiving apparatus is involved, the consequent irritation may cause noises, which need not necessarily be synchronous with the pulse. Quinin and salicylates cause tinnitus, probably by producing hyperemia of the labyrinth, as they increase the blood tension until actual toxic effects are manifested, when the tension is reduced. If this is true, why can not alterations of blood tension due to imperfect nutrition, defective elimination, etc., give the same effects? I have known tobacco to produce tinnitus.

I have had the tension taken in twenty cases of tinnitus in the last two weeks, five of which were cases of low tension, 100, 103, 105, 108 and 110, respectively. In two only the noise was synchronous with the pulse. Of the other cases, one had a tension of 121 and the rest ranged from 140 to 200. One patient, 70 years old, tension 170, had had noises in the ear for twenty years, intermittent in character, without any impairment of hearing. Another with tension of 200 and hearing 1/3 had thumping, throbbing noises synchronous with the pulse for four years in the best ear, while the other, almost totally deaf, had no tinnitus. A woman, 50 years old, tension 170, had the same kind of noise for three weeks with slight impairment of hearing only. Another, with tension of 170, had had intermittent clicking noises in the left ear for three months, with absolutely normal hearing. Thus only four of the twenty had tinnitus synchronous with the heart-beat, two with low and two with high tension. The character of the noises differed in all of them and seemed quite independent of the extent of the deafness or the extent of the alteration in blood pressure. The woman above mentioned was put under treatment to reduce the tension, and when it came down to 140 the noise disappeared. Eleven patients, then, had tension ranging from 140 to 200, and none had kidney disease or marked heart lesions, apart from slight hypertrophy, although one was 70 years old. None of the others were over 56. Probably these will later show more decided signs of arteriosclerosis. The five patients with low tension, of whom only two were women, were all under 35 years, except one, and all of them apparently perfectly healthy. These cases were distinctly of the neurotic type. My results in this small number of cases would indicate that there is abnormal blood tension in nearly all cases of tinnitus, but also that more extensive investigations and more accurate data are necessary to make it

possible to draw any satisfactory conclusions as to the influence of blood pressure in these cases, or to determine its value as an aid to diagnosis.

DR. C. F. WELTY, San Francisco: I am opposed to this theory of tinnitus because otosclerosis, tubal stenosis, adhesive processes of the tympanic cavity, adenoids, tonsils, malformations and pathologic change in the nose or nasal pharynx will account for all cases. Arteriosclerosis of necessity associated with high blood pressure does not produce tinnitus, but produces labyrinthine deafness, dependent on disease of the arterial walls. In one case it will be interstitial nephritis; in another a cerebral hemorrhage. In still another the labyrinth will be most seriously affected. The causes of tinnitus, when it is associated with arteriosclerosis, are dependent on some other lesion than arteriosclerosis. Low blood pressure, as in shock, loss of blood, recovery from acute infectious diseases, anemias, the latter stage of chronic disease, may produce tinnitus, but of transient duration, dependent on the physical condition, and when corrected the tinnitus will disappear. The tinnitus of otosclerosis is not benefited by treatment. In a series of over a hundred cases treated in Politzer's clinic by myself and other assistants by the hot-air hood applied to the head, including the neck, we did improve these cases, but only for a short time. The tinnitus of one ear is dependent on lesions in the ear itself, in the tube, in the nose or throat. Ear noises associated and synchronous with the heart-beat have been observed and have been accounted for in various ways. I am absolutely convinced that low blood pressure has nothing to do with it at all.

DR. LOUIS F. BISHOP, New York: In certain cases, if this symptom is due to circulatory causes, it might be a means whereby one might anticipate graver damage to the structures inside of the head. Of course, this does not apply to low tension cases, because in low tension cases (except secondary low tension) there is no particular danger of any such thing happening. In high tension cases the structures and nerve supply of the eye are often the first to suffer in a way that is noticed by the patient, and the oculist discovers a great many cases of high arterial tension that have gone untreated because there were no previous subjective symptoms. Now is it not true that in some cases there is damage to the structures associated with the ear that give ear symptoms early, and that the otologist discovers certain cases of high arterial tension that should have been under the care of some physician long before? I think it must be true, because so many of the patients that I see with cardiovascular disease have had ear symptoms for a number of years, and these symptoms have been so coincident with the development of these circulatory troubles that I feel convinced that there is some connection. Of course, it may be a degeneration of the ear, coming at the same time with the degeneration of the circulatory apparatus, a mere accidental relation. I feel there is more in this subject than has come out this afternoon, and that we shall find that the ear symptoms of cardiovascular disease will, if carefully observed, lead to the treatment of some patients who would otherwise be neglected.

Clinical Notes

ABNORMAL POSITION OF RIGHT FALLOPIAN TUBE AND APPENDIX.

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The following case is of particular interest, not so much on account of the abnormal position of the appendix, as on account of the coincident abnormal position of the right tube.

The three causes of abnormal position of the appendix are: first, an abnormal length of the mesentery; second, arrested fetal development, and, third, inflammatory conditions.

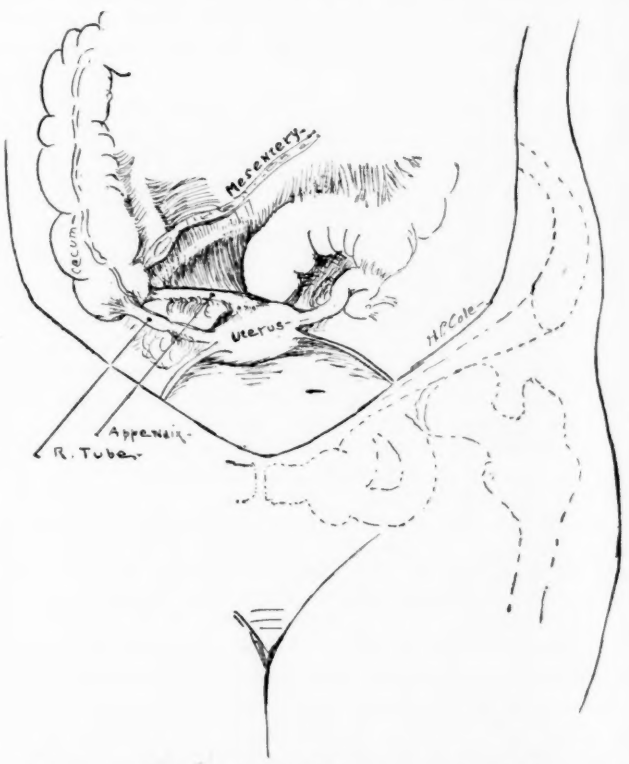
In this case the mesentery was not elongated and the position of the appendix is best explained by a salpingitis following a definite history of pelvic infection shortly after marriage. At some subsequent period an exacerbation of the pelvic condition resulted in the adhesion of the tube to the cecum. The extension of the perisalpingitis to an appendix normally dipping toward the pelvis resulted in an inflammation of the appendix with adhesions of the appendix to the uterus.

The appendix normally assumes the pelvic position in about 25 per cent. of cases (Kelly); and this position is more frequent in women than in men (Robinson).

REPORT OF CASE.

Patient.—Mrs. M., white, aged 39, admitted to the City Hospital, Mobile, Ala., Feb. 1, 1908, complaining of painful and frequent periods, pain in the right side and constipation. Family history was negative and past history unimportant up to time of marriage.

Present Illness.—This dates from marriage, sixteen years ago. Within the first year of marriage the patient gave a definite



Abnormal position of right Fallopian tube and appendix: tip of appendix adherent to the middle of the fundus on the posterior uterine wall; tube adherent to the cecum at the point of origin of the appendix.

history of gonorrheal infection, followed by pelvic pain and increased temperature, with resultant dysmenorrhea. There were several attacks of pain in the right lower abdomen, associated with increased temperature during the past five years. Constipation had been severe for five years. The patient had never been pregnant.

Examination.—The right lower abdomen showed slight prominence and on palpation there was slight rigidity of muscles. On deep palpation muscle spasm and pain extended toward the median line. On vaginal examination the uterus was seen to be drawn slightly to the right, slightly retroposed. The left tube and ovary were apparently normal. The right tube and ovary were not palpated, but a thick mass was found projecting to the right from the right side of uterus. There was no fluctuation. A profuse leucorrheal discharge was present.

Operation.—On Feb. 10, 1908, right salpingo-oophorectomy and appendicectomy were performed. On opening the abdomen

the left tube and ovary were found fairly normal except for a few adhesions from tube to ovary, and from the posterior distal extremity of the tube to the sigmoid. As the tube was patent and the ovary normal they were both left intact; the fine adhesions were freed and the coarse adhesions to the sigmoid separated between catgut ligatures. On the right a mass was found extending from the cecum to the posterior uterine wall. This was found to be composed of the appendix, right tube and ovary. The appendix was adherent at its tip to the middle of the fundus on the posterior uterine wall. Between the appendix and the tube the ovary was found enlarged, and contained a hemorrhagic cyst 3 cm. in diameter. The tube, slightly enlarged, ran directly to the base of the cecum and was adherent to the cecum at the point of origin of the appendix. The entire mass was removed. First the tip of the appendix was freed which necessitated a V-shaped incision in the posterior uterine wall, so firmly was the appendix adherent. The incision in the uterus was closed with catgut; the appendix was removed by the usual purse-string method. The tube and ovary were removed by the usual method after freeing adhesions. The raw surfaces in this broad ligament were whipped over with running catgut sutures. All raw surfaces were closed over. The omentum was stitched to the broad ligament by two interrupted catgut ligatures. Closure was made without drainage. Recovery was uninterrupted.

Postoperative History.—On July 19, 1908, the patient's symptoms had been almost entirely relieved, especially the constipation. The patient had gained in weight.

Diagnosis and Description of Condition.—Subacute salpingitis (right), perisalpingitis, hemorrhagic cyst (right), and chronic obliterative appendicitis. The tube showed the usual picture of a subacute salpingitis; there was an unusual number of eosinophiles in the wall. The ovary, slightly enlarged, showed a thick capsule and contained a hemorrhagic cyst, 3 cm. in diameter. The ovary was covered by adhesions. The appendix, also covered with adhesions, was 11 cm. in length and had undergone fibrous degeneration in its full extent except its inner 3 cm., which contained a fairly normal mucosa.

Howard Kelly mentions a case of a negress in whom the appendix was strongly adherent to the right side of the uterus posteriorly.

J. B. Murphy[1] records an instance in a young woman in which the cecum was drawn over toward the uterus and fixed by an appendix which was much elongated and adherent to the uterus.

Strangulation occurred in both these cases.

D. T. Quigley[2] mentions a case in which the tip of the appendix containing a localized abscess was found to be adherent to the right side of the uterus, the right Fallopian tube in this case being folded back over the appendix.

202 Conti Street.

SIALOLITHIASIS.

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The condition leading to the formation of salivary stones is a rare one which affects the salivary glands less often than their excretory ducts.

Patient.—M. W., aged 16, school-girl, came to me Sept. 28, 1907. Her family history was negative.

Personal History.—The patient had had mumps, measles, chickenpox and whooping cough when a child; tonsillitis nearly every year up to seven years ago, when the tonsils were removed. She had had enlarged glands on right side of neck for about five years.

Examination.—Temperature was 98.9, pulse 90, respiration 18. Inspection showed a marked, diffuse and painful swelling on the right side of the neck and lower part of face and a cord-like swelling underneath the tongue on the right side. The mass on the right side of neck and lower part of face was very firm and extremely tender to pressure. The cord-like swelling on the right side of the tongue was also very firm and tender to pressure. On the following day the external findings were about the same; but the cord-like swelling on the right side of tongue was somewhat larger, especially at the base of tongue, and a distinct impulse of fluctuation could be obtained. By rather firm pressure I was able to press out some phlegmonous material from Wharton's duct. In the region of the outer third of the duct I felt an elongated and rather hard mass which was somewhat movable. I introduced a probe and got a grating sensation. A diagnosis of a foreign body in Wharton's duct was made.

Treatment.—With this diagnosis in view, I attempted to milk out the foreign body from the duct. After a few minutes' milking I succeeded in getting the foreign body out, and with it a considerable amount of necrotic material.

Later History.—The pain which the patient had subsided in a few days, and up to the present time she has had no further trouble. The swelling on the right side and in the glands has totally disappeared.

Concretion.—This was somewhat elongated, oval in shape, measuring 9 mm. in length and 5 mm. in diameter and weighing 2 grains. Its color was grayish yellow, and its consistency so hard that it could not be scratched with the finger nail. At one end was a cavity which extended about one-third of the way into the concretion. This cavity may have been the seat of a foreign body, which determined the formation of the calculus and later decomposed.

Calculi are found in all the salivary glands, not very frequently, yet often enough to cause one to be on the lookout for their presence.

In 1896 Fütterer collected the reports of 160 cases. Roberg in 1904 added forty-seven cases. Jarecky in 1905 collected three more cases and described three additional cases of his own. Since then I have found two additional cases in the literature, making the total, including my one case, 216 up to date.

Salivary stones occur most often in persons between the ages of 20 and 40 years. Burdel reports the occurrence of a calculus in the sublingual duct of a child aged 3 weeks. In this case there had been difficulty in nursing, and it is reasonable to conclude that this was a congenital case. Males are more often affected than females, the proportion being about two to one according to Czygan. According to Buckwald and Wenzel, 61.4 per cent. of all salivary stones belong to Wharton's duct and the submaxillary glands; 20.4 per cent. to the parotid gland and duct; and 18.2 per cent. to the sublingual and their excretory ducts. The size and number of salivary stones vary considerably and stand in a direct relationship to one another. The greater the number the smaller the concretions. Puzey reports a case in which the calculus was one and one-half inches in length and one-half inch in thickness and weighing 115 grains. The average size, however, is from that of a split pea to that of a date-stone. They usually occur singly. Recurrences may take place, but rarely. Out of the forty-seven cases collected by Roberg there were five recurrences; one had three recurrences in twenty-two years; one, two recurrences; two, one recurrence.

The diagnosis of a salivary calculus is easily made as a rule, especially if there is a history of salivary colic or if the concretion can be felt with the finger or probe. If one can not feel the stone with a probe on account of its deep position or the marked swelling of the mucous membrane of the duct, one may pass an exploratory needle into the suspicious site. The report of Alsberg and Gerota have shown that the Roentgen rays may be used to some advantage.

1. THE JOURNAL A. M. A., March 3-24, 1894.
2. THE JOURNAL A. M. A., May 30, 1908, p. 1791.

The prognosis in all cases is favorable. The pain and swelling subsides as soon as the calculus is removed. Marcau has pronounced sialolithiasis "an affection generally more inconvenient than dangerous." Yet the condition should not be looked on as an innocent disease, for the disturbance at times is considerable.

The treatment in such cases should be the removal of the stone through the mouth if possible, but exceptions must be made to this rule.

These exceptions are to be made in the following cases: First, those in which an external fistula leads to the concretion; second, those in which the stone lies in an external abscess cavity; third, those in which the submaxillary or parotid gland itself is the seat of the calculus. As a rule the removal of the stone through the mouth is very simple, provided that the stone is freely exposed or lies directly behind the orifice of the excretory duct, in which case it will only be necessary to divide the overlying tissues and grasp the stone with forceps. A stone lying directly behind the orifice may be pressed out. Local anesthesia only is necessary as a rule. At times when there is difficulty in removing the stone and bleeding is profuse, general anesthesia may be required. After the stone has been removed the wound requires no further attention and the after-treatment merely demands that the mouth be kept clean and frequently rinsed with antiseptic gargles.

Therapeutics

SUPPURATIVE CYSTITIS.

Dr. Victor C. Pedersen, of New York, in the *New York State Journal of Medicine*, July, 1908, describes the treatment of acute, subacute, and chronic suppurative cystitis.

The acute form occurs without retention of urine and with retention of urine. Cystitis in women is easier to handle than in men on account of vaginal hot irrigations being easier of application and more effectual than rectal irrigation, and also on account of the urethra in women making it easier to use a retention catheter, if such is needed.

The constitutional procedures in the treatment of acute cystitis are "rest in bed, a fluid and non-irritating diet, preferably milk or something similar, and free evacuation of the bowels with calomel and salines." Alcohol, tobacco, condiments, and even tea and coffee should be prohibited. The next objects in the treatment are "to dilute, neutralize and antisepticize the urine, to quiet vesical irritation and pain, and to decongest the entire pelvic region."

Dilution of the urine is accomplished by drinking plenty of water, hot or cold, up to the amount of two or even three quarts a day, viz., a glassful every two or three hours. Most of this water should be drunk between rising in the morning and 6 o'clock at night, and much less taken in the evening hours, so that the patient may not be caused to rise as frequently at night to urinate. Milk may be mixed with equal parts of vichy water; buttermilk, koumyss or matzoon may be substituted for milk if desired, or used interchangeably.

It should be the object to neutralize the urine, namely, to render an acid urine neutral, or if a urine is alkaline to render it neutral, as urine either too acid or too alkaline, Pedersen states, causes irritation. Consequently he would use in ordinary acute cystitis with acid urine the simpler alkalies, such as the bicarbonate of soda in daily doses of from 4. to 8. grams (1 to 2 drams), or the citrate of potash in daily doses of from 2. to 4. grams (30 to 60 grains), as:

℞. gm.
Magnesii oxidi ..... 5 | or gr. lxxv
Sodii bicarbonatis ..... 20 | 3v
M. et fac chartulas, 20.
Sig.: A powder, with water or vichy, every three hours during the daytime.

Or:

℞. gm. or c.c.
Potassii citratis ..... 20 | or 3vi
Aquæ ..... 100 | fl.℥iv
M. et sig.: A teaspoonful, in water, every four hours.

If the urine is alkaline, vegetable acids should be given, or perhaps more effective is hexamethylenamin (urotropin):

℞. gm.
Hexamethylenaminæ ..... 10 | or 3iiss
Fac chartulas, 20.
Sig.: A powder, in a glass of water, three times a day.

If it is advisable to use the hexamethylenamin, of course, it is one of the best antiseptics for the urinary tract that we possess. Or phenylis salicylas (salol) may be used, and if there is a rheumatic condition present, perhaps this is the best internal antiseptic. If salol is used, the dose should not be large and the urine should be watched for any signs of phenol poisoning, as salol breaks up into salicylic acid and phenol in the intestine. It may be given as follows:

℞. gm.
Phenylis salicylatis ..... 5 | or gr. lxxv
Fac capsulas, 20.
Sig.: A capsule every three or four hours during the daytime.

A trace of albumin in the urine, or signs of kidney irritability, or backache that can be referred to a congestion of the kidneys, should prevent the administration of either salol or urotropin.

Generally in acute cystitis rest, a bland diet, the alkalies, and the local measures instituted will relieve vesical or urethral pain. However, it is often necessary to use a narcotic, as opium in some form, scopolamin (hyoscin), or belladonna. If the pain is severe, opium or morphin suppositories may be used. A combination of belladonna with morphin is often good treatment, as:

℞. gm.
Morphinæ sulphatis ..... 10 | gr. iss
Extracti belladonnæ foliorum ..... 20 | or gr. iii
Olei theobromatis ..... 20 | 3v
M. et fac suppositoria, 10.
Sig.: A suppository every six or eight hours, if needed.

Hyoscyamus in the form of the tincture is often used as a vesical sedative. It is a question whether it has any action differing from that of belladonna, or of a small dose of atropin. It may be used as follows:

℞. c.c.
Tincturæ hyoscyami ..... 25 | or fl. ℥i
Sig.: 20 drops, in water, every four hours.

The action of morphin is, of course, sedative to cystitis as it is to any inflammation. Atropin or any drug containing it, as hyoscyamus or belladonna, is sedative to the terminal endings of the nerves and seems to be especially sedative to the nerves at the neck of the bladder, and will relieve the constant desire to urinate that is so urgent in acute cystitis.

Pedersen also recommends the use of aconite in the form of the fluid extract in doses of 2 drops (1 minim) every two or three hours until the lips, throat and finger tips begin to tingle. After this he would give it at four-

hour intervals. He finds the aconite "to allay the congestion powerfully and surely, not only in the bladder itself, but in the pelvis." Such sturdy use of aconite would seem not often necessary in cystitis, and even the use of any of the above nerve sedatives can often be avoided by the proper use of hydrotherapeutic measures, and saline purges should not be neglected. The hydrotherapeutic measures consist of the hot sitz bath, perhaps two or three times a day, and hot vaginal or rectal douches.

If in spite of the above treatment the cystitis persists or becomes subacute, bladder washings or even permanent drainage with the catheter remaining in position, especially in women, may be necessary.

When the vesicle tenesmus is very severe and it is perhaps inadvisable to use morphin, Pedersen uses cocain, instilling from 10 to 20 drops of a 2 or 4 per cent. solution into the prostatic urethra or into the neck of the bladder. The possibility of unpleasant symptoms occurring from the absorption of cocain thus used should preclude its frequent use.

In subacute cystitis Pedersen instills into the region of the neck of the bladder 0.5 c.c. (7½ minims) of a 10 to 20 per cent. solution of argyrol, or a 5 per cent. solution of nitrate of silver, and he says that the relief from such instillations is sometimes "almost magical." He does not state how often such instillations should be used, but the usual frequency is from three to five days, depending on the stimulation such mucous membrane requires.

As acute cystitis improves, of course, the diet is enlarged, more food may be taken, and good sense exercised in the amount of walking that the patient should do. The continuance of urinary antiseptics will depend on the cause of the cystitis or the infection, and it is always advisable to examine the purulent matter in cystitis as well as in urethritis to determine what germs are present. It may be advisable to diminish or stop the administration of any alkalizers of the urine, if such have been given, lest a urine that is continuously neutral or alkaline may not inhibit the growth of germs as does normal acid urine. If a genitourinary stimulant seems needed to complete the cure of the inflammation, santal oil, oleoresin of copaiba, and oil of gaultheria are suggested by Pedersen. The oil of gaultheria is another method of administering salicylic acid, and is, of course, a urinary antiseptic, and may be the best treatment. The oil of santal and the oleoresin of copaiba act similarly, except that the copaiba is more likely to cause gastrointestinal indigestion and has no advantage over santal oil. The santal oil may be administered in elastic capsules each containing 5 minims, and Pedersen advises the use of three of these a day, one after each meal.

The urine should be carefully watched during acute and subacute cystitis. If there are casts in the urine Pedersen advises against the administration of the antiseptics. Certainly it should prohibit the use of salol. Whether the same is true of hexamethylenamin is still open to discussion.

Pedersen quotes Dr. William H. Thompson as advising the use of benzoate of soda in 0.30 gram (5 grain) doses when it is inadvisable to use urotropin.

If the cystitis has passed the acute stage and tends to be protracted, irrigations are advisable and necessary, but, as Pedersen says, "it must not be forgotten that no means of irrigation that can be employed will penetrate the full depth within the mucous membrane reached by the inflammatory processes and by the infection." Whatever solution is used for irrigation, the following rules should be followed, viz.: never distend the bladder too forcibly, and always wash until the return fluid is clean. To further the first rule, Pedersen recommends the use of the hand syringe, of which the "Janet-Franck glass barrel syringe" he thinks is the best type. To carry out the second rule he insists on the use of test glasses which should be ready at hand to show when the washing solution is returned clear. It does not seem as though a graduated fountain syringe, elevated but slightly above the patient and the elevation regulated by the pressure desired, would do any harm. At first salt solution should be used, as a teaspoonful of salt to a pint of water, or a bicarbonate of soda solution, a tablespoonful to a pint of water, or a 1 per cent. boric acid solution. Later Pedersen would use for irrigation "weak solutions of potassium permanganate, as 1 to 10,000, increasing slowly to 1 to 4,000." Silver nitrate solutions may be used of 1 to 20,000 up to 1 to 5,000. "A soft rubber or flexible woven catheter" is the best to use, and the temperature should begin with the body heat and increase up to 110 F. After the washing is completed it is advisable to leave an ounce of fluid in the bladder, which will tend to prevent the vesicle tenesmus which often follows. If there is much pus in the bladder the irrigations should be done "twice daily, then once a day, and then every other day, and later every third day."

If there is retention of urine at any time during the cystitis the question of permanent drainage, either by a catheter or operation will have to be considered, permanent drainage with a retained catheter being perhaps better than frequent catheterization.

The treatment of chronic suppurative cystitis can only be carried out successfully by determining the cause of the condition. Whatever that cause may be, it should be removed if possible; then the best possible simple foods, gentle exercise, massage if deemed advisable, fresh air and free, daily movements of the bowels should be instituted, as any upset condition of the body will perpetuate chronic cystitis. Uric acid irritations or phosphatic irritations should be prevented if possible. Hot baths are advisable and over-tire should be prevented. Also there should be no opportunities for getting severely chilled, as chilling of the body will aggravate any cystitis.

If the urine is alkaline, as it generally is, the benzoate of soda or hexamethylenamin may be used, as above suggested. It may be advisable at times to use salol, or it may seem best to use a stimulant, as oil of santal. Irrigations of the bladder may be necessary, and the same care should be exercised as stated above in acute and subacute cystitis. The irrigations may be given daily, or less frequently, as indicated by the amount of pus or decomposition present. If the cause of the condition is one that can be removed surgically, operation should not be long postponed, but the success of an operation is greater if the cystitis has been relieved to the greatest possible extent.

Importance of Pure Milk.—When we consider that milk constitutes practically the sole article of diet of infants and invalids, and enters into the dietary of all more or less, and that of all foods it is the most delicate and sensitive to bacterial contamination, it is surely time that we are waking up to the fact that it is at least as deserving of municipal control as is our water supply or light or power.—Charles J. C. O. Hastings in the *Canadian Practitioner and Review*, July.

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SATURDAY, NOVEMBER 7, 1908.

THE SERUM TEST IN HEREDITARY SYPHILIS.

According to the usual teachings, hereditary syphilis may result either by paternal or maternal transmission or from both these sources. It is generally taught, too, that the mother not only may pass on her own syphilis to the fetus, but that she may also be the means, as it were, of transferring virus without herself appearing to become infected. In the latter instance, in the light of our present knowledge of the etiologic rôle of the *Spirochæta pallida* in syphilis, it would be reasonable to assume that the semen from the syphilitic father is not in itself infectious but carries the spirochete which then perhaps might enter the ovum at the same time as the spermatozoon. There is much, however, that favors hereditary syphilis always being the result of syphilis in the mother. Thus, for instance, Welander in Stockholm has not seen a single case in which there was any probability that a woman free from syphilis gave birth to a syphilitic child. Another author (Edmanson) found that in 345 congenitally syphilitic children he could determine syphilis in 343 of the mothers and he concludes that the mother is the source of congenital syphilis. Matzenauer of Vienna expresses himself as being of the same opinion. This being the case, what about Colles' law?

Recent applications of the Wassermann test for syphilis to new-born children suspected of being syphilitic and to their mothers appears to throw some light on the question. Thus Bauer[1] found that of 201 new-born infants and nurslings examined at random, twenty-two gave a positive result with the Wassermann test; in all the cases that appeared clinically to be congenitally syphilitic the reaction was positive. His tests further showed that mothers of distinctly hereditary syphilitic children, although themselves apparently well and free from symptoms and without any history of infection, gave a positive reaction. Consequently there seems to be strong reason to conclude that the immunity of the mother postulated by Colles' law in reality does not exist, the mother, on the contrary, being the subject of latent syphilis. While it might be possible that soluble poisons from a paternally infected fetus could pass back to the mother and stimulate in her the formation of immune bodies, and while it is also possible that antibodies might pass directly from the fetus to the mother, we have no analogies of such occurrences so far as we know in other infections.

There is another law usually mentioned in connection with hereditary syphilis, namely, Profeta's law: When a woman suffering from syphilis in its contagious stage bears a child which shows no taint, that child may be suckled by its mother with impunity and will not contract the disease from her. This so-called law is not without exception. The serologic test here also has given results which indicate that apparently or nearly healthy children may have latent congenital syphilis, as the serum of seemingly healthy children of syphilitic mothers may give a positive reaction with the Wassermann test. On the whole, it would seem as if latent syphilis in the woman is the reason for the maternal immunity described in Colles' law, and that latent syphilis in children explains the instances of immunity in the offspring of syphilitic mothers covered by Profeta's law.

In case the Wassermann reaction continues to receive the credit at present accorded to it, so far as reliability is concerned, it no doubt will prove of great importance for the crucial examination of wet nurses and of nurslings as to their freedom from syphilis because it seems able to reveal the disease when all clinical symptoms are absent. By its means some light may be thrown also on the disputed question of syphilis in the third generation. But before final conclusions can be drawn from the results obtained with it, it will be necessary for us to know more definitely than we do at present the nature of the bodies in the serum of syphilitic patients that inhibit hemolysis by fixing the complement. It is not at all certain that these bodies are true antibodies for the syphilis germ, as is so generally taken for granted at present.

1. Wien. klin. Wchnschr., 1908, xxi, 1251.

TUBERCULOSIS AMONG THE FOREIGN-BORN.

In Section V of the International Congress on Tuberculosis, the one concerned with the social and economic aspects of the question, the larger part of an afternoon's session was devoted to the discussion of the comparative frequency of tuberculosis among the foreign-born inhabitants of our country, and also among the Indians and the negroes. A striking agreement was evidenced both as to the facts and as to the interpretation of the facts. It seems that the Italians and the Greeks suffer more from tuberculosis here than in their own countries. Ireland has notoriously a high death rate from this disease, but, according to Flick, the children of Irish immigrants in the United States are even more susceptible than their foreign-born parents. In the case of the Italians, there is abundant proof that they do not bring the disease to this country but acquire it here. The medical inspection at Ellis Island is strict, and of those who pass it the greater number are undoubtedly in good health, and yet year after year the steamers carry back

to Italy a large number of consumptives who are going home in the hope of recovering from the disease caught in our tenements and factories.

It is said that a similar statement may be made concerning the Greeks. Greek immigrants are chiefly strong young adults, yet we are told that numbers of them return home infected with tuberculosis. Both the Greeks and Italians come from the peasant class and are accustomed to an out-door life, while here they enter factories and crowd into city tenements. Dusty trades and an indoor life produce the result we know now to be well-nigh inevitable.

At the other extreme from the Irish and southern Europeans stand the Jews, with their truly extraordinary resistance to this disease. That this resistance is not due to a lack of susceptibility to infection is indicated by a relatively high morbidity rate, but the Jew, though infected, does not succumb to the disease as does the Irishman or Indian.

Thus, we find that the statistics as to the death rate among the Jews and non-Jews, as given by Dr. Fishberg of New York, show an enormous superiority on the part of the Jews. In Berlin the rate per 10,000 living is among the non-Jews 21.6, among the Jews 9.8. In Vienna it is 49.6 to 17.9; in Cracow 66.4 to 20.4, and in New York the figures are 23.9 for the whole population and 17.2 for the Jews. This is the more remarkable when one considers the fact that the Jews are almost always city dwellers and the large majority live in extreme poverty in the most crowded and unhygienic quarters of the city, engaged in hard indoor occupations. They are usually under the average height, hollow-chested and of slight muscular development. Their immunity can only be explained as acquired by centuries of city life. For almost 2,000 years the Jew has been driven to city life, in consequence of which he has become "urbanized," and, therefore, the crowded tenement, the factory work, the home industries which are so detrimental to the descendant of centuries of peasant ancestors, find the Jew already acclimated; his race has endured similar conditions since the beginning of the Christian era.

The Irishman, the Italian, the Greek, who come to this country have never been urbanized and the increase of tuberculosis among them is a matter for serious thought. Commissioner Watchorn of Ellis Island gave some interesting figures illustrating the evil effects of our city life on these people. Of 129 foreigners who were admitted at Ellis Island free from signs of tuberculosis, but developed the disease within three years of their landing here, only twenty had been city dwellers at home, but 117 had lived in cities after their arrival in this country.

Mr. Watchorn believes that if tuberculosis exists in our foreign colonies it is to be attributed to the conditions under which the people are living and that the real responsibility rests on our municipalities.

ANAPHYLAXIS.

Studies in anaphylaxis have not only a remarkable theoretic interest but promise to produce important practical results. A number of conditions may be grouped together as having, probably, the hypersusceptibility of the organism to certain foreign substances as their basis. The best known instance of this is a sudden death in man after the injection of horse serum in the form of diphtheria antitoxin. The symptoms in the reported cases have been closely related to asthma, and it has been suggested that the offending substance acts on the respiratory center. Local vasomotor paralysis is also probably a factor and allies these conditions with others in which a sudden edema of some part of the body is a prominent symptom. Among these conditions may be classed edema of the lungs, angioneurotic edema, and possibly urticaria. The peculiar symptoms evoked by eggs in some individuals are probably instances of anaphylaxis. It has also been suggested by Rosenau and Anderson[1] that some cases of puerperal eclampsia can best be explained by anaphylaxis from an autolytic placenta.

The further studies made by these investigators throw some light on this hypothesis, as well as on the general theory of anaphylaxis. They subjected female guinea-pigs to injections of autolytic placenta which sensitized them to such a degree that second injections produced toxic symptoms including convulsions. They also found that a period of incubation of about seven days is manifested in the development of anaphylaxis. The animals once sensitized remain so for a long time, two years in guinea-pigs. The sensitizing principle is gradually influenced by heat and disappears almost entirely when horse serum is heated to 100 degrees C. for one hour. The toxic principle is also gradually destroyed by heat. It does not appear to diminish with the age of the serum. Attempts to neutralize the toxic action of horse serum have so far been unsuccessful. Various experiments have shown the specific nature of anaphylaxis. For example, guinea-pigs sensitized with horse serum, egg white and cow's milk contain three separate anaphylactins in their blood. There appears to be a group reaction in the proteins of widely different species or between proteins of widely different origin. Guinea-pigs sensitized with sheep's milk react to a subsequent injection of cow's milk, but those sensitized with dog's milk do not. A substance known as anaphylactin is present in the serum of sensitized or immune guinea-pigs, but has not so far been found in the blood serum of man, the monkey or the cat.

The sudden deaths following the injections of horse serum have attracted wide attention. Naturally the suspicion arose that these serums contained some unusual poison. The experiments of Rosenau and Anderson have shown, however, that the horse serum used in

1. Further Studies on Anaphylaxis, Hygienic Laboratory Bulletin No. 45.

these cases is no more toxic for guinea-pigs than is antitoxic horse serum used extensively in human therapy without untoward symptoms. It seems evident that it is not the serum that is unusually toxic, but the individual who is unusually sensitive. In what manner man may thus become sensitized to a foreign poison is not known.[1]

The association of asthma and hypersusceptibility to horse serum suggests a relation that should be borne in mind in the administration of antitoxin. It is to be hoped that the prosecution of further researches on this subject may result in the discovery of a means of preventing such accidents and possibly of a remedy for the sensitive individuals who suffer from asthma, angioneurotic edema and similar conditions.

THE NERVOUS SYSTEM AND TUBERCULIN REACTIONS.

One of the most interesting of the recent contributions to our knowledge of tuberculin reactions is described in a recent article by Moro.[2] Working in Pfaundler's clinic in Munich with the so-called percutaneous tuberculin reaction (rubbing in tuberculin-lanolin), Moro obtained results which indicate the probable participation of the autonomic or sympathetic nervous system in the reactions. Thus in several children the ointment yielded a reaction not only at the site of application but also in a contralateral skin area situated exactly symmetrically to the spot inoculated. Again, in other children, besides the reaction at the spot anointed, scattered areas of reaction appeared in the skin at points widely separated from the inoculation site. If, for example, the tuberculin-lanolin preparation was rubbed into the skin of the abdomen, typical efflorescence appeared next day not only there but on the chest, back and neck, that is to say, in regions with which no tuberculin had been in contact. Still further, inunction was occasionally followed by a unilateral, girdle-like zone of reaction extending from the spot of application backward to the vertebral column and forward to the ventral median line.

It seems obvious that these reactions at a distance can not be due to a direct toxic effect of the tuberculin on the tissues in which the reactions occur but depend on nervous influences in which the spinal cord participates, though the main rôle must be ascribed to the sympathetic system.

From these observations, and others on which we can not here dwell, Moro has come to the conclusion that the percutaneous tuberculin reaction is essentially a vasomotor phenomenon due to strong excitation of vasodilator paths. He looks on the reaction as an angioneurotic inflammations—a kind of "late reflex" in the sense of Kreibich.[3]

If this view be correct it will be hard to avoid the inference that in people infected with tuberculosis there exists a specific irritability of the nervous system toward tuberculin, in other words, a specific nervous "allergy." Moro's results are most interesting and will doubtless stimulate further research along similar lines.

BREAKFASTLESS SCHOOL CHILDREN.

Considerable discussion—not a little being sensational—has appeared recently in the newspapers on the question of underfed school children, mainly aroused by the reports of sanitary inspectors that large numbers go breakfastless to school. The first remedy that occurs to many zealous social reformers is to supply free meals, the assumption being that the conditions are due to poverty. Without doubt, in a great city, there are always some children who go hungry to school, on account of actual lack of food; in this country, however, we believe they are few and far between. Such should be cared for by the proper charitable agencies, and not through the school. Looking at the subject from a purely medical point of view, poverty is not the cause in more than an extremely small minority of the cases of those who go breakfastless. Every physician is aware of the capricious morning appetites of children who are physically below grade from any one of numerous causes, and this is especially likely to be the case with those living in the urban slums and crowded tenement districts. Any dispensary physician or visiting nurse will testify to this fact. In a recently issued edition of a work on the British poor,[1] the author says that a large proportion of the children, if asked why they had no breakfast, would say it was because they did not want it, or often, in case of the younger children, because their mothers could not make them take any. The cause in many cases lies farther back than the mere lack of food, which is often plentiful enough; it is generally the unhygienic customs and conditions of the poorer classes that are the real cause. It is not in the poor alone, moreover, that we observe these irregular appetites; they are common enough in the children of the comparatively well-to-do, but the condition appears in a more aggravated form in a bad hygienic environment. The practice of giving children stimulants, such as strong coffee and tea, the heavy evening meals and meals at irregular hours, sleeping in crowded ill-ventilated rooms, etc., are all active factors in producing capricious appetites, and they should all be taken into account when seeking a remedy. There would be little use in spending public money for free meals for children who do not want to eat in the early morning.

THE TEETH OF SCHOOL CHILDREN.

Medical inspection of schools is so recent that it is rather early to draw conclusions from it. The earliest examinations were directed to the discovery of contagious diseases, but recently the work of the inspector is demanded more in relation to pedagogy than to

1. THE JOURNAL, Oct. 3, 1908, p. 1158.
2. Klinische Ueberempfindlichkeit. I. Mitteilung: Tuberkulinreaction und Nervensystem. Münch. med. Wchnschr., 1908, 2025-2028.
3. Kreibich, K.: Die angioneurotische Entzündung, Vienna, 1905.

1. Loane, M.: The Next Street but One, London, 1908.

the interests of the public health. Problems of mental and physical development must be taken up and attention must be paid to those organs that are of special importance in the securing of education. Consequently it is as necessary to discover physical defects of the eyes and ears and general nutrition as the presence of streptococci in the throat or pediculi on the scalp. While defects of vision probably rank first in their influence on the mentality, they are not so frequent nor are they so important with reference to general nutrition as is the condition of the teeth. According to J. E. Laberge,[1] among 50,000 children inspected in Montreal, 1,333 were found with defective vision while 13,385 had decayed teeth. Inspections in the Chicago schools give about the same proportion. Decay of the teeth is likely to be passed over lightly as an inevitable defect of little importance. Its importance should not, however, be underrated, as it is likely to have an unfavorable effect on nutrition and incidentally on mental development. That such decay is largely preventable goes without saying.

Medical News

CALIFORNIA.

Honors to Sanitary Officers.—Dr. Rupert Blue, U. S. P. H. and M.-H. Service, was given a gold cigarette case and gold match box, October 3, at a dinner given in his honor by the members of his staff. Dr. William C. Rucker, his chief executive officer, was also given a gold watch.

Tuberculosis Dispensary.—The San Francisco Society for the Study and Prevention of Tuberculosis announces that a dispensary will be opened about the end of this month, to be maintained by private contributions. The society has also arranged a course of lectures on the general subject of tuberculosis.

Health Officers Meet.—At the twenty-sixth semi-annual meeting of the Central California Health Officers' Association in Fresno, October 13, a resolution was passed asking that efforts be made toward affiliation with similar organizations in the northern and southern portions of the state, with a view of the united associations seeking an appropriation of $100,000 from the state legislature to be used in the prevention and extermination of typhoid fever.

Society Meeting.—At the annual meeting of San Joaquin Valley Medical Association, held in Fresno, October 13, the following officers were elected: President, Dr. Samuel W. Langdon, Stockton; vice-presidents, Drs. Charles R. Harry, Stockton; Benjamin F. Walker, Stockton; and Thomas Dell. Blodgett, Tulare; secretary, Dr. Dwight H. Trowbridge, Fresno; assistant secretary, Dr. William W. Cross, Jr., Fresno; and treasurer, Dr. Thomas M. Hayden, Fresno.

Quarantine Lifted.—By direction of Surgeon General Wyman, P. H. and M.-H. Service, to Drs. Blue and Hobdy, the quarantine against vessels leaving San Francisco harbor was removed October 21. For the first time in fourteen months, ocean-going crafts are able to come and go without rat guards, dock fenders, and periodic fumigation. The federal quarantine officer closed his office October 22. The fumigating barge has been dismantled and towed to the quarantine station, and the men employed in fumigating vessels have been discharged from duty.

Vital Statistics.—During September, 2,369 deaths, exclusive of still-births, were reported for the month, or 46 fewer than for August, the annual death rate being 14.3 per 1,000. Of the deaths 358, or 15.1 per cent. were from various forms of tuberculosis; 331, or 14 per cent., from diseases of the circulatory system. Among the notable causes were diseases of the digestive system, 282; violence, 263; diseases of the nervous system, 191; diseases of the respiratory system, 163; cancer, 144; epidemic diseases, 132. Typhoid fever caused 61 of the deaths from epidemic diseases, diphtheria 25, malarial fever 14, whooping cough 10, and other causes 22.

The Sick and Afflicted.—Dr. Arthur M. McIntosh, Berkeley, who was operated on recently for appendicitis in San Francisco, is convalescent and expects soon to resume practice.——Dr. Joseph D. Davidson, Fresno, is reported to be critically ill in Adler Hospital, San Francisco.——Dr. Walter D. Stannard, Lodi, was seriously injured by falling from his bicycle October 6.——Dr. John M. Dunsmoor, assistant superintendent of the Los Angeles County Hospital, was held up and robbed October 12.——Dr. William W. Fitzgerald, Stockton, was operated on in St. Joseph's Home, October 14, and is reported to be doing well.——Dr. Augustus F. Schafer, Bakersfield, who was operated on for appendicitis, September 17, has recovered and resumed practice.

Personal.—Dr. Walter W. Cross, Jr. has been appointed city bacteriologist of Fresno.——Dr. Irving R. Bancroft has been appointed second assistant city health officer of Los Angeles.——Dr. Luther M. Leisenring has been elected president of the recently appointed board of health of Placerville.——Drs. William H. Wallace, Charles C. Falk and John N. Chain are the medical members of the new board of health of Eureka.——Dr. John Mallery has been appointed city physician and health officer of Eureka, and Dr. Eugene Falk deputy.——Dr. Eugene H. Reed and wife, Tuolumne, expect to leave for Europe, January 1.——Dr. Sidney R. Daunenbaum, San Francisco, has been appointed professor of theory and practice of medicine and clinical medicine in the College of Physicians and Surgeons, San Francisco.——Dr. William M. Stover, San Luis Obispo, has returned from Europe.——Drs. Arthur C. Smith and George Reinle have been appointed assistant surgeons in the Receiving Hospital, Oakland.

Hospital Notes.—At the meeting of the Monterey Peninsula Hospital Association, October 15, the finance committee reported that $870 had been subscribed up to date.——The treasurer of San Francisco delivered to the Rollins-Harris syndicate, October 22, $280,000 in hospital bonds, for which the purchasers paid $299,683.——The children of San Francisco held a charity "tag day" November 3 for the benefit of the Children's Hospital. Each male passerby was assessed 10 cents and tagged.——St. Francis Hospital Association, San Francisco, has bought a site for its new buildings at Hyde and Bush streets at a cost of about $175,000.——The Oriental Hospital, started ten years ago by the Chinese Consul, will be reopened. The hospital and dispensary is conducted by the Six Companies for Chinese and Coreans, and the new building, which cost about $10,000, and has from thirty to forty beds, will be ready about November 1.——The annex to Belvedere Hospital, San José, was formally opened October 1. Forty patients can be accommodated.——A new hospital is to be erected in Petaluma in mission style, two stories in height, to accommodate 25 patients.——Providence Hospital, San Luis Obispo, has suspended operations.——Drs. R. Douglas Potts, William R. Livingston, and Adolph A. Maulhardt, have leased the Sunderman building, Oxnard, and will renovate and fit it up as a hospital.

CONNECTICUT.

Sanatorium Opened.—The Undercliff Sanatorium for Tuberculosis, Meriden, was formally dedicated September 22, addresses being made by the governor of the state, the mayor, and other interested individuals.

Company to Pay Physician.—The Robert N. Bassett Manufacturing Company, Shelton, which employs between 600 and 700 hands, announced October 22 that in the future it would pay the bills for medical services of its employés.

Personal.—Dr. Marvin Scarborough has been appointed instructor of pharmacology in Yale Medical School.——Dr. J. S. Martin has been appointed medical examiner and health officer of Watertown, vice Dr. Walter S. Munger, resigned.

Osteopath Fined.—R. F. Mancuer, an osteopath, formerly of Brooklyn, who has been in charge of a so-called institute at Winsted and was arrested for practicing medicine without a license, is said to have pleaded guilty and to have been fined $25 and costs, amounting in all to $35.62.

Dinner to Naval Surgeons.—On October 12, more than fifty members of the Bridgeport Medical Association gave a dinner in honor of Dr. Mensa, surgeon Royal Italian Navy and physician to the king of Italy, and Dr. Karl Ohnesorg, surgeon, U. S. Navy. Dr. Mensa spoke interestingly of the tuberculosis congress to which he was the accredited representative of the Italian Government.

Communicable Diseases.—Scarlet fever is reported to be epidemic among the pupils of the Over River school, Norwalk.

1. School Hygiene, September, 1908.

——Several houses in Bristol are quarantined on account of diphtheria.——Sixteen cases of diphtheria are reported in Cromwell.——A number of cases of typhoid fever are reported from Willimantic.——Typhoid fever is reported to be prevalent throughout New Britain.

Vital Statistics.—During September there were reported in the state 1,233 deaths, 174 less than in the previous month, 175 less than in September, 1907, and 22 less than the average for September during the five years preceding. Of the deaths reported, 151, or 12.2 per cent., were from infectious diseases. Chief among death causes were nervous diseases, 143; diarrheal diseases, 139; heart diseases, 109; accidents and violence, 94; consumption, 93; pneumonia, 49; typhoid fever, 21; diphtheria, 14; whooping cough, 9; influenza, 4; and measles, scarlet fever, and cerebrospinal fever, each, 3. During the month the following cases of infectious diseases were reported: Measles, 36 in 15 towns; scarlet fever, 67 in 24 towns; cerebrospinal fever, 1 case; diphtheria, 103 cases in 32 towns; whooping cough, 23 or more cases in 9 towns; typhoid fever, 226 cases in 55 towns; and tuberculosis, 103 cases in 21 towns.

DELAWARE.

Personal.—Dr. Abram E. Frantz, Wilmington, has been elected secretary of the State Board of Health, vice Dr. Alexander Lowber, deceased.——Dr. Oliver J. Gray, Wilmington, while visiting his father at Quantico, Md., recently, was seriously injured by the premature explosion of a shot gun, necessitating the amputation of his left foot.

State Society Meeting.—At the annual meeting of the Delaware Medical Society, held in Wilmington, October 13, the following officers were elected: President, Dr. Henry J. Stubbs, Wilmington; vice-presidents, Dr. L. August H. Bishop, Dover, and William F. Haines, Seaford; councilor, Dr. James Brayshaw, Delmar; secretary, Dr. George W. K. Forrest, Wilmington; treasurer, Samuel C. Rumford, Wilmington; delegate to the American Medical Association, Dr. James H. Wilson, Dover; alternate, Dr. John J. Black, Newcastle; and delegate to the Council of Medical Education, Dr. H. Ward Briggs, Wilmington. The 1909 meeting will be held in Dover.

DISTRICT OF COLUMBIA.

Antituberculosis Association Organized.—The Association for the Prevention of Tuberculosis in the District of Columbia was organized October 27, Gen. George M. Sternberg, U. S. Army, retired, presiding.

Health Report.—According to the health and mortality record for the week ended October 17, there were 111 deaths, of which 60 were white. The births reported were 106 white and 57 colored. There were 223 cases of typhoid fever under treatment at the close of the week.

Vote of Confidence.—The Medical Association of the District of Columbia, on October 27, adopted by unanimous rising vote a resolution of confidence in Hon. Jacob H. Gallinger, chairman of the senate committee, thanking him for his services to the medical profession of the district and the country.

Typhoid Fever in Georgetown.—After investigation, Dr. William C. Woodward, health officer of the District, says there is nothing in the current typhoid fever epidemic in Georgetown to lead the health department to believe that it is in any way related to school attendance. It has been traced without a reasonable doubt to an infected milk supply.

Outings for the Poor.—A regular meeting of the outings committee was held October 20. The general secretary's report showed that 3,102 people had been given outings during the summer, and that 4,150 mothers and children had been entertained at the summer camps. The treasurer reported that the cost of operating the outings has amounted to $3,679, leaving a balance on hand of over $1,000.

Sanitary Manicure Shops.—As a result of statements that diseases have been spread by unclean manicuring establishments, and on suggestions of physicians that the tools in these shops be carefully sterilized, Commissioner West has instructed the health officer to prepare an amendment to the health regulations, which will require manicure establishments to maintain strict sanitary precautions.

Health Department Estimate Increased.—Dr. William C. Woodward, health officer of the District, in his annual estimate submitted to the commissioners, asks for an appropriation of $202,605, or $88,652 more than the amount appropriated by Congress for the fiscal year. The most important increase is the creation of an assistant health officer, who is to be a physician and act as health officer in the absence of the latter.

Pure Food Law Evaded.—The Department of Agriculture will endeavor to obtain a modification of the pure food law at the coming session of Congress in order to prevent evasion of the law by manufacturers of adulterated products. A recent example is a dealer who has extensively advertised a mixture of "Java and Mocha" coffee. Investigation by the department showed that the mixture contained less than 1 per cent. of Java and the balance being composed of Costa Rica Mocha.

ILLINOIS.

Personal.—Dr. Edgar Holm, Waukegan, has returned from Europe.——Dr. Robert F. Hayes, Freeport, who has been practicing medicine in Stephenson County for more than fifty years, announces his intention of retirement.——Dr. Joseph F. Dicus, Streator, was operated on for appendicitis, October 27.

Communicable Diseases.—The schools at Isabel were dismissed October 19, on account of diphtheria.——The epidemic of diphtheria and scarlet fever in Waukegan is said to be due to milk obtained from insanitary dairies and farms near the city. The epidemic is apparently on the increase and the conditions in North Chicago are said to be alarming.

To Safeguard Laborers.—A state commission (of three manufacturers, three employés, one lawyer, one sanitarian and one citizen at large) will investigate thoroughly and report bills and other methods for providing for the health, safety and comfort of employés in factories, shops, etc. Dr. Henry B. Favill, Chicago, is the physician on the commission. It has been commented that satisfactory results have not been secured in the past because of the lack of cooperation and mutual understanding between capital and labor, and that this commission gives promise of good results.

Epidemics at an End.—The epidemic of typhoid fever in West Pullman and that of scarlet fever and diphtheria near West Forty-sixth Street and Ashland Avenue appear to be at an end. The situation at the Beale School is also said to be improving, although more slowly. As a result of these three situations, the Department of Health has formulated the following conclusions:

First—Every case of contagious disease results from somebody's violation of the law.

Second—No epidemic situation can be allowed to drift. The policy of *laissez faire* will not work.

Third—The mailed hand will cure any epidemic situation in short order.

Fourth—The clergy, physicians and good citizens generally can be depended on when they are stirred into activity.

Fifth—So long as the community backs the Department of Health it can guarantee them against general epidemics.

Society Notes.—At the annual meeting of the Military Tract Medical Society, held in Peoria, October 15 and 16, the society, which is one of the oldest in the state, decided to discontinue the organization and disband.——At the annual meeting of the Association of Military Surgeons of the State of Illinois, held in Chicago, October 8, the following officers were elected: President, Major Thomas C. McCord, assigned Fourth Infantry; vice-president, Lieut. Com. David W. Graham, Naval Reserve; secretary, Major Charles Adams, secretary to surgeon general (re-elected); and assistant secretary, Major S. C. Stanton, assigned First Infantry (re-elected). The next meeting of the association will be held at Dixon.——The annual meeting of the Western Illinois District Medical Society was held October 30 in Jacksonville. Addresses were delivered by Dr. James W. Petit, president, and Dr. Edmund W. Weis, secretary of the State Medical Society. It was decided to hold the next meeting in Quincy. Dr. John W. Adams, Carrollton, was elected president; Drs. John H. Rice, Quincy, and David W. Reid, Jacksonville, vice-presidents; Dr. William P. Duncan, Jacksonville, secretary-treasurer (re-elected); and Drs. Robert J. Christie, Jr., Quincy, Frank P. Norbury, Jacksonville and Levin H. A. Nickerson, Quincy, censors.

Chicago.

Must Report Tuberculosis.—The department of health announces that on and after November 6, every practitioner in Chicago, under penalty of prosecution, must report immediately every case of tuberculosis that comes under his observation.

Faculty Changes.—Dr. William A. Evans has been made professor of sanitary science in Northwestern University.——Dr. Brown Pusey has been appointed head of the department of ophthalmology in Northwestern University, vice Dr. Casey Wood, resigned.——Dr. Frank Allport has resigned from the faculty of Northwestern University.

Infectious Diseases.—During the week ended October 31, there were reported 630 cases of infectious diseases, an in-

crease of 74 over the preceding week. To this total, diphtheria contributed 213 cases; scarlet fever, 177; typhoid fever, 87; tuberculosis, 72; pneumonia, 23; measles, 22; chickenpox, 16; whooping cough, 7; puerperal fever, 1; and diseases of minor importance, 11. The most notable increase was in diphtheria.

October Deaths.—There were reported during October, 2,281 deaths, or 29 fewer than for the previous month, and 12 fewer than for the corresponding months of 1907. The annual death rate per 1,000 was 12.41. Acute intestinal diseases caused 342 deaths; consumption, 238; pneumonia, 205; heart diseases, 188; violence (including suicide), 184; nephritis, 182; cancer, 124; diphtheria, 67; scarlet fever, 36; whooping cough, 7; influenza, 3; and measles, 2.

Mortality of the Week.—During the week ended October 31, 541 deaths were reported, 33 fewer than for the preceding week, and 31 fewer than for the corresponding week of 1907. Pneumonia, for the first time since the spring, leads other diseases in mortality, with 58 deaths. Consumption caused 54 deaths; diarrheal diseases, 51; nephritis, 45; heart diseases, 44; violence (including suicide), 38; cancer, 32; and acute digestive diseases, 31.

Abortionist Loses.—The fight in the state's attorney office against criminal abortion has resulted in a new interpretation of the law under which it is claimed conviction will be more easily secured. In the case of Mrs. Lucy Hagenow, sentenced to twenty years' imprisonment for abortion, her attorneys made a point, on appeal, that her case was prejudiced because of testimony admitted to show that in ten years she had caused the deaths of at least ten women. The Supreme Court asserted that, while this case may have been prejudiced by the admission of the other cases, this was not the fault of the law, but the result of facts and circumstances surrounding the case. The opinion of the Supreme Court reaffirmed the order of the lower court, thus practically sentencing the aged criminal to life imprisonment.

IOWA.

Keokuk Medical College Merged.—The Keokuk Medical College, College of Physicians and Surgeons, has just merged into the Drake University College of Medicine at Des Moines. The Keokuk college was organized 58 years ago and has held a prominent place in medical education in its section of the country. The museum, library and laboratory equipment, as well as a large portion of the student body, have been transferred to the Des Moines school.

MARYLAND.

Lectures on the Heart.—Dr. Thomas E. Satterthwaite, New York City, gave a special series of clinics, lectures and demonstrations in the clinical amphitheater of the University Hospital, Baltimore, October 26-29. The subjects dealt with were physical examination in heart disease, myocardial diseases, valvular diseases and resistance exercises, carbonated baths, and other methods in the treatment of chronic heart disease.

Baltimore.

Water Supply Menaced.—Four cases of typhoid fever are reported in one family near Lake Roland. Lake Roland is one of the sources of supply of drinking water for Baltimore.

Personal.—Dr. George R. Graham is said to be critically ill. ——Dr. James E. Harris returned from London October 30.——Dr. Clyde A. Clapp is ill at the Maryland General Hospital with typhoid fever.

New Cottages Opened.—The "Solomon Kann" and "Samuel and Emma Rosenthal" memorial cottages, recently erected on the grounds of the Jewish Home for Consumptives, Reisterstown, were dedicated October 25. Each cottage is intended to accommodate ten patients in the incipient stage.

Entertainments.—A banquet was tendered Dr. Louis Hamman, director of the Phipps Dispensary, Johns Hopkins Hospital, October 26, by the authorities of the hospital. Mr. Phipps was present at the banquet.——During the past week Dr. John C. Hemmeter entertained Surgeon General Oscar von Schneider of the German Army and Dr. Thomas Satterthwaite of New York City.

Will Not Allow Lectures on Hygiene.—The school board has refused to allow lectures on hygiene to be delivered to the children of the public schools on the ground that it had no authority to allow the schools to be used for such a purpose. The Parent's Club had made arrangements for this course under the auspices of the Medico-Chirurgical Faculty of Maryland, and the lectures will now be delivered in a church.

MASSACHUSETTS.

Communicable Diseases.—Winchendon reports a new outbreak of scarlet fever.——Scarlet fever and diphtheria are reported as numerous in Malden.——The cause of the recent typhoid fever in Brighton has been located. A boy employed as helper on a milk wagon is now ill with the disease.——Typhoid fever is reported from Great Barrington, where 6 cases have occurred.

Womans' Medical Society.—At the October meeting of the Woman's State Medical Society, held in Boston, the topic under discussion was "Some Public Health Problems, with Special Consideration of the Suppression of Unnecessary Noise." The society voted that the chairman of the committee on legislation be authorized to represent it at the public hearing of the proposed bill soon to take place before the legislature.

Personal.—Drs. Michael F. Garvin, South Boston, and Josephine M. de la Neuville, Holyoke, have returned from Europe.——Dr. Fred T. Murphy, Boston, has been elected a trustee of Phillips Andover Academy.——Drs. Herbert B. Priest, Groton, and Ernest L. Hunt, Worcester, have been named as associate medical examiners.——Dr. Walter F. Sawyer, Fitchburg, was thrown from his carriage in a collision with an electric car, October 16, and sustained serious contusions.

Help for Tuberculosis Institutions.—Girls of Newton on "tag day," October 4, collected $3,500 to establish a clinic for tubercular patients at the Newton Hospital.——The city government of Lawrence has passed an ordinance, erecting and equipping a hospital, to be known as the Lawrence Tuberculosis Hospital, and to cost not to exceed $14,000.——The secretary of the Boston Association for the Relief and Control of Tuberculosis, announces that fifteen camps were now used in the state; that a hospital for advanced cases is now in course of erection at Mattapan; and that during last week, thirty more beds for tuberculosis patients would be established in Boston.——The state has purchased three parcels of land in Westfield comprising 128 acres as a site for one of the state tuberculosis sanatoria. When completed, this institution will be used to accommodate the tubercular patients from the western part of the state.

Councilors Meeting.—At the stated meeting of the councilors of the Massachusetts Medical Society, held in Boston, October 7, Drs. Arthur V. Goss, Taunton, and Benjamin P. Croft, Greenfield, were appointed delegates to the Vermont State Medical Society; and Drs. Samuel B. Woodward, Worcester, and Carl A. Allen, Holyoke, to the Medical Society of the State of New York. Dr. Thomas J. Robinson, Taunton, was appointed to fill the vacancy on the standing committee to procure scientific papers, caused by the death of Dr. Charles Harrington, Boston. Dr. George W. Gay, Newton, was appointed chairman of the committee on state and national legislation, vice Dr. George G. Sears, Boston, resigned. Dr. Frederick M. Spalding, Boston, was made a member of the committee on ophthalmia neonatorum. The date of the annual meeting of the society was changed to June 15 and 16, in order to avoid conflict with the American Medical Association meeting at Atlantic City.

NEW YORK.

Society Meetings.—At the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, held in Utica, October 15, the following officers were elected: President, Dr. Gilbert D. Gregor, Watertown; vice-president, Dr. Frank E. Fox, Fulton; secretary, William D. Garlock, Little Falls, and treasurer, F. Edward Jones, Beaver Falls. Watertown was chosen as the place for the next meeting.——At the annual meeting of the Sixth District Branch of the Medical Society of the State of New York, held recently, in Binghamton, Dr. Seth A. Mereness, Oneonta, was elected president; Dr. Frank DeW. Reese, Cortland, vice-president; and Dr. Herbert W. Fudge, Elmira, secretary-treasurer.——At the annual meeting of Utica Medical Library Association, held October 5, Dr. William H. Beattie was elected president; Dr. Arthur M. Johnston, vice-president; Dr. Raymond L. Baker, secretary; and Dr. Charles H. Baldwin, treasurer.

New York City.

Harvey Society Lecture.—The second lecture of the Harvey Society course, delivered by Dr. William G. MacCallum of Johns Hopkins University, Baltimore, November 7, is on the subject of "Fever."

St. Luke's Hospital Anniversary.—In the notice of the fifteenth anniversary of St. Luke's Hospital in THE JOURNAL,

October 31, it was erroneously stated that 863 patients had been treated in the institution during the year. The correct number was 12,863.

Milkmen and Butchers Fined.—Twenty-five milkmen and twenty-five butchers were fined sums ranging from $10 to $35 recently. The milk dealers were accused of putting formaldehyd in the milk, and the butchers of preserving meats with sulphurous acid.

Personal.—The Municipal Civil Service Commission has approved the appointment of Dr. Sigismund S. Goldwater, the superintendent of Mount Sinai Hospital, as a consulting expert in hospital administration and construction, to advise the architects and direct the completion of the plans for the new Bellevue Hospital.

The Investigation at Bellevue.—The Board of Trustees of Bellevue and the Allied Hospitals have had another meeting and have sent out a report denying that excessive charges were paid for soap, and thus exonerating Dr. Armstrong. The hearing of charges against Dr. Armstrong in regard to a personal interest in a sale of books to the hospital has not been completed.

Charity Has Odd Chance.—A will was filed for probate in Brooklyn recently which makes large bequests to charity in case a legatee who is very ill dies before the will is probated. In this event the Faith Home for Incurables will receive $2,500; the Brooklyn Home for Aged Men, $15,000, and the Home for Destitute Children and the Brooklyn Industrial Home will also receive substantial sums.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended October 24, 509 cases of tuberculosis, with 156 deaths; 322 cases of diphtheria, with 17 deaths; 133 cases of measles, with 6 deaths; 129 cases of scarlet fever, with 2 deaths; 84 cases of typhoid fever, with 16 deaths; 26 cases of whooping-cough, with 1 death; 9 cases of cerebrospinal meningitis, with 6 deaths; and 92 cases of varicella, a total of 1,294 cases and 204 deaths.

Vital Needs of City Departments.—A letter has been sent out to physicians and others who are philanthropically disposed by Social Workers, stating that there is grave danger that the Department of Health Tenements, Charities, Education and Hospitals may not receive the reasonable appropriations necessary to do the work so urgently needed in these directions. It is urged that personal letters be sent to the mayor and members of the board of estimate and apportionment. There is special need for greater hospital facilities and school and tenement inspection.

Health Department Handicapped.—Dr. Thomas Darlington has protested before the Board of Estimate and Apportionment because the appropriation for the Health Department was $329,340, while the department asked for $443,250. This will necessitate reductions in the force. Dr. Darlington claimed that the policy of the city was very shortsighted, as the expenditure of a little more on the Health Department would save millions in other directions. He urged that some steps be taken to govern midwives in their treatment of the eyes in the newborn, as this was a fruitful source of blindness and defective sight among children, and eventually put a heavy burden on society.

New Red Cross Tuberculosis Camp.—The Brooklyn branch of the American National Red Cross has decided, with the cooperation of the Bureau of Charities, to establish a tuberculosis day camp. It will be started within a year at annual cost of from $3,000 to $5,000. The intention is to raise the greatest part of the funds by the sale of Christmas stamps. The board of health made an attempt to establish a camp in Brooklyn three years ago, but was unsuccessful because residents of the neighborhood objected. Dr. Glentworth R. Butler was elected president of the Brooklyn branch.——The New York County division of the National Red Cross Society has just held its first annual meeting. It was determined to establish a day camp for consumptives on the roof of the Vanderbilt Clinic. A strong plea was put forth for the establishment of a night camp as well. It is expected that the $5,000 necessary for the establishment and maintenance of the day camp will be forthcoming by Christmas.

NORTH CAROLINA.

Scarlet Fever Epidemic.—An epidemic of scarlet fever of mild type is reported at the State Orphanage, Oxford, where 28 cases developed during the week of October 16. The patients were isolated and the epidemic now appears to be well in hand.

New Hospital.—The trustees of Rex Hospital, Raleigh, have let the contract for the erection of a new building of concrete fireproof construction, to cost without furnishing, $36,000.——The necessary orders have been given by the Beckett Hospital Commission for two new buildings for consumptives at the Western City Hospital, Morganton. These will accommodate about 100 patients. One building will be for male and the other for female patients.

Liquor Prescriptions.—The board of aldermen of Charlotte has passed an ordinance which permits any legal druggist to sell to one patient on a physician's prescription, one pint of whiskey per day, and this sale may be effected without requiring a special license from the city. It is expected that the result of this state of affairs will likely be the establishment of a medical dispensary, which will sell liquor on physicians' prescriptions only, the profits going to the city.

State Hospital Commission.—The State Hospital Commission has finally decided to enlarge the state hospital, Raleigh, until its space equals that of the sister institution at Morgantown, and in line with this policy has ordered erected a two-story building containing eighty rooms with a view to segregate convalescent women in the new structure some distance from the main buildings of the institution. A building for male convalescents, consisting of three pavilions, will also be built at Raleigh.

Personal.—Dr. William D. MacNider, Chapel Hill, has been appointed a member of the committee for arranging an ideal course in pharmacology for American medical schools.——Dr. Charles H. Herty of the chemical department of the university, has been appointed a member of the National Committee on Conservation of the Country's Natural Resources.——Dr. J. Ernest Stokes, Salisbury, who has been in the Adirondacks for some time in search of health, has greatly improved and expects to resume practice soon.——Dr. Charles Roberson, Greensboro, has returned from Europe.——Dr. Francis J. Clemenger and family, Asheville, sailed for Europe October 24.

Society Meetings.—At the annual meeting of the Iredell-Alexander County Medical Society, held in Statesville, Dr. Thomas E. Anderson was elected president; Dr. E. A. Hall, vice-president; and Dr. John E. McLaughlin, secretary and delegate to the state medical society, all of Statesville.——At the fifth annual meeting of the Tenth District Medical Society, held in Waynesville, October 28 and 29, Dr. J. Howell Way, Waynesville, was elected president; Dr. Sheridan C. Heighway, Murphy, vice-president, and Dr. Thomas E. W. Brown, Asheville, secretary. On the first evening Dr. and Mrs. Way gave a reception in honor of the members of the society.——At the meeting of the New Hanover County Medical Society, held in Wilmington, October 8, the following officers were installed: President, Dr. Edward J. Wood; secretary, Dr. Thomas M. Green; censors, Drs. William D. McMillan, R. B. Slocum and Robert H. Bellamy.——At the annual meeting of the Greensboro Academy of Medicine, October 23, the following officers were elected: Dr. Edmund Harrison, president; Drs. Charles W. Moseley and John A. Williams, vice-presidents; Dr. Charles W. Banner, secretary; Dr. Thomas R. Little, treasurer; and Drs. Parran Jarboe, Albert R. Wilson and William J. Richardson, censors.

OKLAHOMA.

College Opens.—With a new building, the medical department of Epworth University, Oklahoma City, opened for its annual session, October 6.

New State Board of Medical Examiners.—The new State Board of Medical Examiners of Oklahoma organized at Shawnee, October 8, with the following officers: President, Dr. W. C. Tilly, Muskogee; vice-president, H. C. Montague, D. O., Muskogee; secretary, Dr. Frank P. Davis, Enid; and treasurer, Dr. Daniel W. Miller, Blackwell. The next meeting will be held at Muskogee.

PENNSYLVANIA.

Cocain and Public Schools.—The school children of the sixth police district have had access to the use of cocain through "cokers" who reside in that section, and a rigid investigation is being made. Eleven arrests have been made of persons charged with using the drug and some of the individuals were committed for treatment while others were held in $2,000 bail, charged with selling the drug.

Contagious Diseases.—Up to October 29, 125 cases of diphtheria and 25 cases of scarlet fever were recorded in Girardville, with many new cases appearing daily. The public schools have been closed.——All the schools and amusement places in Nanticoke have been closed on account of an epi-

demic of diphtheria. Five new cases were reported October 29, making a total of more than 100 since the epidemic began. ——Smallpox was reported from Gracedale, Luzerne County, October 30.——Smallpox is now present in four counties of the state.

Railroad Mortality.—The report of the State Railroad Commission shows that 302 persons were killed and 3,514 injured by the railroads of the state during July, August and September. Of these the steam roads killed 253 and injured 2,039, and the electric roads killed 49 and injured 1,476. Sixty-four per cent. of the persons killed on the steam roads were trespassers, more than 25 per cent were employés, and less than 1 per cent. were passengers. Of the injured on steam roads more than 72 per cent. were employés, more than 11 per cent. were trespassers and more than 10 per cent. were passengers. More than 26 per cent. of those killed on electric roads and more than 71 per cent. of the injured were passengers. Only a trifle more than 4 per cent. of those killed and less than 4 per cent. of the injured were employés. At grade crossings the steam roads killed 21 persons and injured 48, while the electric roads killed 1 and injured 2.

Philadelphia.

Hospital Buys Land.—The Woman's Hospital has purchased six lots on Seybert Street, each measuring 16x60 feet, for $11,050, for a site for an addition to the present building.

Personal.—Dr. William T. Shoemaker has been awarded the Alvarenga Prize of the College of Physicians of Philadelphia, for his essay on "Retinitis Pigmentosa."——Dr. Harry Mansfield, who was recently injured in an automobile accident, is convalescing.——Dr. Louis Starr had the honorary degree of doctor of laws conferred on him by Haverford College, October 16.

New Tuberculosis Dispensary.—The authorities of the Kensington Dispensary for the Treatment of Tuberculosis have secured for $15,000 a lot 40x120 feet at Hancock street and Susquehanna avenue, on which it is proposed to erect a new dispensary building.——The Garretson Hospital has secured a property at Nineteenth and Hamilton streets on which the authorities propose to erect a new building at a cost of $75,000.

Officers Elected.—At the meeting of the Pathological Society of Philadelphia, October 22, the following officers were elected: President, Dr. Joseph McFarland; vice-presidents, Drs. David L. Edsall, David Reisman, Aloysius O. J. Kelly and Allen J. Smith; secretary, Dr. Ralph S. Lavenson; treasurer, Dr. Courtland Y. White; recorder, Dr. Frederick H. Klaer, and curator, Dr. E. H. Goodman.——At the meeting of the Resident and ex-Resident Alumni Association of Mount Sinai Hospital, Philadelphia, October 1, the following officers were elected: Chairman, Dr. Julius L. Werner; vice-chairman, Dr. Benz H. Mann; secretary-treasurer, Dr. Michael Austin; and historian, Dr. Jacob Levy.

Meeting for a Pure Milk Supply.—The Public Health Committee of the Civic Club will hold a meeting in the interests of pure milk in Horticultural Hall, Monday evening, November 16. The meeting will be presided over by Dr. Joseph S. Neff, Director of Public Health and Charities, and the following addresses will be made: "A City's Fight for Pure Milk," by Dr. George H. Coler, Health Commissioner of Rochester, N. Y.; "The Production of Pure Milk," by Dr. Leonard Pierson, Philadelphia; "Milk as a Food for Children," by Dr. Samuel McC. Hamill, Philadelphia; and "Milk as an Economical Food," by Dr. Lawrence F. Flick, Philadelphia.

Filtered Water for City.—Every district of the city where mains are laid will be supplied with filtered water by March, 1909. The filtered water districts now comprise West Philadelphia, Roxborough, Manyunk, Germantown, Thirty-eighth ward north of Allegheny Avenue and the greater portion of the northeastern section of the city. With the completion of the preliminary filters at Torresdale in January, the capacity of that plant will be increased from 20,000,000 gallons, the present daily rate, to 240,000,000 gallons. The completion of the Torresdale plant will bring the city's total filtered water supply to 304,000,000 gallons every twenty-four hours, or but little more than the present estimated daily consumption. To provide for future increase in water consumption, plans are being prepared for the construction of a filter plant at Queen Lane, with a capacity of over 60,000,000 gallons daily.

Health Report.—The deaths reported to the Health Bureau for the week ended October 31 numbered 405, including 210 males and 195 females, a decrease of 26 from the previous week and a decrease of 63 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 4; measles, 3; scarlet fever, 6; diphtheria, 9; consumption, 41; cancer, 16; apoplexy, 13; heart disease, 43; acute respiratory disease, 46; enteritis, 33; hepatic cirrhosis, 4; Bright's disease, 45; premature birth, 14; congenital debility, 10; senility, 8; suicide, 3; accidents, 20; and marasmus, 5.——There were 202 cases of contagious diseases reported, with 21 deaths, as compared with 200 cases and 32 deaths reported in the preceding week. The new cases of contagious diseases reported were as follows: Scarlet fever, 54; an increase of 6 over the previous week; diphtheria, 112, an increase of 8; consumption, 138, an increase of 17; and typhoid fever, 36, an increase of 12.

VIRGINIA.

Itinerant Oculist Goes to Jail.—J. T. Bradley, an itinerant eye specialist, who has been practicing in Danville for several weeks, is said to have been consigned to jail in default of payment of a fine of $25, imposed on him by the mayor, October 17, for practicing without a license. After a few hours in jail, he decided to pay the fine, under protest, and was released.

Bequests.—W. G. Leek, for many years a citizen of Harrisonburg, provided in his will that the residue of his estate, $20,000 to $25,000, shall go to the common council of Harrisonburg for the establishment and maintenance of a hospital in that city.——The late Isadore I. Strauss, Richmond, in his will bequeathes $1,000 to the National Jewish Hospital for Consumptives, Denver.

Richmond Vital Statistics.—During September, there were 166 deaths in the city, equivalent to an annual death rate of 17.75 per 1,000. The deaths were 39 less than for the previous month, and 21 less than for the corresponding month of 1907. There were recorded 14 deaths from typhoid fever, as compared with 8 in the same month last year. Consumption caused 18 deaths; nephritis, 16; congenital debility, 13; cancer, 12; pneumonia and heart disease, each, 7; and violence (including suicide), 5.

Society Meetings.—At the annual meeting of the Norfolk and Portsmouth Medical Society, October 14, the following officers were elected: President, Dr. William L. Harris, Norfolk; vice-presidents, Drs. Stanley H. Graves, Norfolk, and Joseph Grice, Portsmouth; secretary, Dr. Robert L. Payne, Jr.; and treasurer, Dr. D. Lee Hirschler.——At the annual meeting of the Elizabeth City County Medical Society, October 12, Dr. Walter A. Plecker, Hampton, was elected president; Dr. George K. Vanderslice, Phoebus, vice-president; and Dr. George W. McAllister, Hampton, secretary-treasurer.——At the annual meeting of the Newport News Medical Society, held October 13, Dr. George E. Newby was elected president; Dr. J. H. Mabry, vice-president; and Dr. T. J. Pretlow, secretary-treasurer.

State Medical Society Meeting.—The Medical Society of Virginia met for its thirty-ninth annual session in Richmond, October 20, under the presidency of Dr. William Francis Drewry, Petersburg. The president, in his annual address, denounced the present theory which records experts on insanity as for sale to the highest bidder, and recommends that the court be empowered to call the expert instead of allowing the plaintiff or defendant to do so. The new constitution and by-laws adopted last year and in force for the first time this year, were pronounced satisfactory and praiseworthy, and a large amount of the detail of the business of the convention is taken from the hands of the society and disposed of by a council of 16. The following officers were elected: President, Dr. Stuart McGuire, Richmond; vice-presidents, Drs. Otto C. Wright, Jarrett, Elliott T. Brady, Abingdon, and Reid White, Lexington; secretary, Dr. Landon B. Edwards, Richmond (re-elected); and treasurer, Dr. Robert M. Slaughter, Theological Seminary (re-elected). It was decided to hold the 1908 meeting at Roanoke.

WEST VIRGINIA.

Epidemic Diseases.—There is reported to be an epidemic of typhoid fever in and around Fayetteville.——Wheeling has just passed through an epidemic of diphtheria, which was first noticed soon after the opening of the public schools.——A number of cases of scarlet fever of mild type in children are reported from Warwood.

Society Election.—At the annual meeting of the Ohio County Medical Society, held in Wheeling, October 15, the following officers were elected: Dr. Andrew J. Noome, president; Dr. John J. Osburn, vice-president; Dr. Charles A. Wingerter, secretary (re-elected); Dr. Robert M. McMillen, treasurer; and Drs. Edward L. Armbrecht, James G. Walden and D. Bigger Best, censors, all of Wheeling.

WISCONSIN.

Milwaukee Physicians' Association.—This association, which was organized and incorporated last summer to promote the spirit of fraternalism and good fellowship, and to formulate proper methods of protecting its members against delinquent debtors, held a banquet October 17, over which Dr. Henry J. Gramling presided as toastmaster.

GENERAL NEWS AND COMMENTS.

Personal.—Dr. Victor G. Heiser, director of health and chief quarantine officer in the Philippine Islands, and Dr. Fernando Calderon y Roca, Manila, have been in attendance on the International Congress on Tuberculosis.——Dr. Walter Hoffman, Honolulu, has returned from abroad and resumed practice.

Antivaccination Meeting.—A temporary organization, known as the Antivaccination League of America, met in Philadelphia, October 19-21. The objects were to protest against the state's right to vaccinate, to spread information regarding the alleged ill effects of vaccination, to discuss methods to be pursued in the effort to eliminate laws supporting vaccination, to take steps to abolish oppressive medical laws, and to resist the proposed enlargement of the scope of state medicine. Many addresses were made denunciatory of vaccination At the final meeting an anathema was hurled at the heads of the medical profession in general, and the Philadelphia County Medical Society in particular.

Railway Surgeons Meet.—At the fourth annual meeting of the Association of Surgeons of the Atlantic Coast Line Railroad Company, held in Jacksonville, October 21, the following officers were elected: President, Dr. James H. McIntosh, Columbia, S. C.; vice-president, Dr. James H. Pittman, Jacksonville, Fla. (re-elected); secretary-treasurer, Dr. Augustus C. Hoyt, Waycross, Ga.; and member of executive committee, Dr. John E. Boyd, Jacksonville. The next meeting will be held at Wilmington, N. C.——The twenty-seventh annual meeting of the Association of Surgeons of the Pennsylvania Lines, West, was held in Pittsburg, recently. Dr. Adam M. Beers, New Comerstown, Ohio, was elected president; Drs. John B. Donaldson, Canonsburg, Pa., and Sidney B. McLeod, South Chicago, Ill.; and secretary-treasurer, Dr. Stewart L. McCurdy, Pittsburg. The next annual meeting will be held in Columbus, Ohio.

Examination for Army Medical Corps.—The Surgeon General announces that examinations for the appointment of first lieutenants in the Army Medical Corps will be held Jan. 11, 1909, at points to be hereafter designated. Information concerning the examination can be obtained on application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements are that the applicant shall be a citizen of the United States, between 22 and 30 years of age, a graduate of a legally authorized medical school, of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examination on general education may be omitted in the case of applicants holding diplomas from reputable colleges, normal schools or high schools, or graduates of medical schools, which require entrance examinations satisfactory to the faculty of the Army Medical School. Applications should be in the possession of the adjutant general on or before December 10. There are at present fifty-seven vacancies in the corps.

Sanitation of the Canal Zone.—The report of Dr. William C. Gorgas, Colonel Medical Corps, U. S. Army, chief sanitary officer of the Canal Zone, shows that in August, 1906, there were 153 deaths of employés, equivalent to an annual death rate of 62.12 per 1,000; in 1907 there were 93 deaths, equivalent to a death rate of 27.59 per 1,000; and in 1908 the death rate was still further reduced, 42 deaths being reported, equivalent to an annual death rate of 11.39 per 1,000. In August, 1906, with a force of 29,000 men, there were more than three times as many deaths from malaria as occurred in August, 1908, in a force of 44,000. Typhoid fever caused no deaths in August, 1908. In the corresponding month of the previous year it caused 7 deaths and in August, 1906, 9 deaths. Dysentery in 1908 caused 2 deaths; in August, 1907, 6 deaths, and in August, 1906, 10 deaths. In 1906, for every 1,000 employés, there were 42.66 sick every day; in 1907, this rate was reduced to 29.02; in 1908 it was still further reduced to 25.24. No case of yellow fever or plague has originated on the Isthmus during the last two years. Among the 8,175 Americans in the Canal Zone, of whom 2,169 are women and children, only two deaths occurred, one due to drowning and one to childbirth.

An International Association of Esperantist Physicians.—At the Fourth Esperantist Congress, held during August in Dresden, a meeting of the medical members was held under the presidency of Professor Dor of Lyons. Delegates were present from all parts of the world. Major Philip Straub attended as delegate on behalf of the Medical Corps, U. S. Army. From the *Vocho de Kuracistoj* we learn that the committee appointed to discuss the formation of an international association of esperantist physicians reported favorably, and the Tutmonda Esperanta Kuracista Asocio was accordingly organized, with the object of promoting the practical inter-relations of esperantist physicians of all countries. All qualified physicians are eligible, the subscription being fixed at $1, payable at the commencement of each year. Arrangements were made for the establishment of an official organ. The central committee will elect for every country one or more "consuls" and also representatives according to the requirements, in all cities of sufficient medical importance. The duties of these representatives will be to direct the propaganda of esperanto among physicians in their respective jurisdictions, and to render assistance in matters of information, etc., to traveling esperantist physicians. Professor Dor of Lyons, France, was elected president; Drs. Myhs of Altona, Prussia, and Whitaker of Liverpool, England, vice-presidents; Dr. Mikolajski, of Lwow, Austro-Galicia, secretary; and Professor Soulier of Lyons, France, treasurer. Consuls were elected for France, Russia, Austria, Germany, Poland, England and Sweden. Dr. W. Robin requests all physicians who sympathize with this movement to send him their names and addresses, stating also whether or not they are willing to undertake the duties of consul or representative. Address Dr. W. Robin, Warsaw, Russia, ul. Senatorska, 40.

The Phonograph in the Antituberculosis Crusade.—Dr. Oscar H. Rodgers has prepared a series of terse tuberculous talks for the phonograph, which he calls "Canned Aphorisms." These records have been employed in Yonkers, at the State Fair in Syracuse, and at 36 county fairs by the State Charities Aid Association. In Washington at the International Congress on Tuberculosis, megaphone warnings repeatedly resounded. One of the records has been presented to the physician of the Czar of Russia, and will be translated and the information disseminated throughout the country. The association has put its six outfits at the disposal of the local committees of the state, who are asked to follow the plan of attracting crowds by musical selections and between the selections giving short phonograph talks on tuberculosis. The following are among the aphorisms which have been prepared:

Consumption is caused by the poisonous germs in the consumptive's spit. The poisonous spit dries and goes to dust, into other people's lungs. A little poisonous spit, when scattered in dust, is enough to affect dozens of people. That is why careless spitting is dangerous. That is why everybody should be careful to spit only into spittoons or into the gutter. People who spit on the floors of their homes spread disease. Workmen who spit on the floors of their workshops spread disease. Tobacco juice is just as dangerous as any other spit. People who spit on the sidewalk where women may get it on their dresses and take the poison home, spread the disease. Don't be a careless spitter.

A consumptive who coughs and spits anywhere and everywhere is a danger to his family and to all about him. He will poison the house he lives in and the shop where he works. He should cough and spit into a cloth or paper that can be burned, so as to kill the poison in his spit. A careful consumptive, who coughs and spits into anything that can be boiled or burned is perfectly safe to be about you. Be kind to the careful consumptive, but avoid the careless consumptive who coughs and spits everywhere and anywhere. He is dangerous to have about you. He will poison the air with the dust from dried spit.

Sunlight and fresh air kill the poison in the consumptive's spit. That is why you should see that you have fresh air in your homes. Don't live or work in rooms where there is no fresh air—such rooms are dangerous. Always sleep with your windows open in winter and summer. Don't be afraid of damp air. Don't be afraid of night air. They are not dangerous, but rooms that are kept closed are dangerous because the poison of disease is in the air of such rooms. Let all the sunlight and fresh air that you can into your rooms. Sleep in the fresh air. Work in the fresh air. Live only in the fresh air.

Consumption may be cured if taken in time, but usually not otherwise. If you suspect that you have consumption—if you have a slight cough that hangs on—if you are gradually losing weight—if you are beginning to feel tired all the time—if you have a slight fever in the afternoon, go at once to your family physician, or if you are not able to do that, go at once to the dispensary, so as to make sure whether you have consumption or not. Don't waste time on consumption cures—they only waste your money and your time.

Consumption is cured, if taken in time, by these three things: Fresh air, rest, food. Fresh air—summer and winter, rain or shine, day and night, out of doors if possible. Rest—all you can get. Food—all you can eat of plain food, bread and butter, milk and eggs. Medicine is of little use. "Patent medicines" do not cure consumption. While you are taking them you are losing time. Fresh air, rest and food are better than all the medicines you can take. Don't lose time with medicines.

CANADA.

Medical Colleges Open.—The annual session of Laval University Medical Faculty began September 10, when the vice-rector, dean and several members welcomed the students.——The opening lecture in the Faculty of Medicine of McGill University was delivered by Dr. Gibson of Edinburgh, Scotland, September 24, in the Royal Victoria College.

Election.—At the annual meeting and banquet of the Winnipeg Medico-Chirurgical Society, October 2, the following officers were elected: President, Dr. W. McLean; vice-presidents, Drs. John O. Todd and Samuel W. Prouse; secretary-treasurer, Dr. Charles H. Vrooman; and councilors, Drs. Charles Hunter Galloway, Jasper Halpenny and William H. Smith.

Epidemic Diseases.—Typhoid fever is reported to be epidemic in Montreal, where the hospital cases alone number more than 200. The epidemic is attributed to the bad condition of the water and to improper milk.——In the first week in October sixteen cases of typhoid fever were reported to the health department of Winnipeg.——There are six smallpox patients in Swiss Cottage Hospital, the municipal hospital of Toronto.

Staff Reorganized.—The staff of St. Michael's Hospital, Toronto, has recently been reorganized. There will now be two services in surgery in charge of Drs. Irving H. Cameron and Walter McKeown; two services in medicine in charge of Drs. Robert J. Dwyer and Harry B. Anderson. The service in obstetrics and gynecology will be under the charge of Dr. Frederick Fenton, assisted by Drs. Alton H. Garrett and Malcolm M. Crawford and the eye department will be in charge of Dr. George H. Burnham.

French Physicians Visit Toronto.—A party of 20 French physicians was entertained in Toronto by the Academy of Medicine, September 18. They were in charge of Professor Landouzy of Paris. They took an automobile ride around Toronto; were entertained at luncheon in the university dining hall by Dr. Richard A. Reeve, dean of the medical faculty; were tendered a reception in the afternoon in the Academy of Medicine by the president, Dr. James F. W. Ross and Mrs. Ross, and were entertained at dinner at the Toronto Club by Drs. Ross and W. Henry B. Aikins.

Personal.—T. F. Brody, M.D., F.R.S., London, has been appointed titular professor of physiology in the University of Toronto.——Dr. Bruce L. Riordan, Toronto, has gone to New York for treatment at the Pasteur Institute.——Hon. Dr. Robert A. Pyne, minister of education, Ontario, has returned from England.——Drs. Graham Chambers and Walter McKeown, editors of the *Dominion Medical Monthly*, Toronto, have been appointed associate professors of medicine and surgery, respectively, in the medical department of the University of Toronto.——Dr. John Mearns, Woodstock, Ont., sprained his ankle and bruised his head in a fall at Princeton, October 14.

FOREIGN.

Mexican Notes.—Typhus fever is reported to be epidemic in Mexico City, and is said to be one of the worst epidemics known in recent years. It is said to have developed and broken out in the hospital of the general prison and spread from the prison through released prisoners.——One hundred and thirty new cases of typhus fever are said to have developed in Belem jail, Mexico City, during the month ended October 11.——The typhus epidemic in the state of Tlaxcala is said to be extending very rapidly throughout some of the haciendas in the district of Hyamantia.——Dr. José Ramos, on October 13, was appointed director of the National Medical Institute, vice Dr. Fernando Altamirano, deceased.

The International Antiquackery Conference.—At the suggestion of the Netherlands Antiquackery Society an international conference was held by delegates from the German, Swedish, Finnish, Austrian and Dutch antiquackery societies at Berlin, September 24. The organization of international efforts for insuring concerted action against quackery was advocated; also similar legislation in various countries to reduce the quack and nostrum evils. Several spoke in favor of an international central collection of literature and works relating to quackery, and it was proposed that Holland should be the center of this international campaign. This central library should receive all publications relating to quackery in any way, thus including the pamphlets and circulars sent out by quacks. The resolution was adopted that each national organization should report to this central office, and that antiquackery societies should be founded in every land. It is hoped by the material thus accumulated in the central library to be able to make out reports to be presented to the different authorities in the different countries, which will influence them in favor of legislation against quackery. The conference was attended by delegates from some of the medical councils and public health associations, and representatives of the police department and Imperial Council of Public Health. The Austrian delegate stated that the strict legislation against quackery in Austria has done a great deal of good. The moral impression on the people had been an important aid. The proceedings of the conference are published in the *Gesundheitslehrer* or Guide to Health, the official organ of the German Antiquackery Society.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Oct. 24, 1908.

Cholera Precautions.

Dr. Williams, health officer for the Port of London, reports that so far no case of cholera has arrived. All vessels arriving from St. Petersburg are closely inspected and all drinking water brought from that city is thrown overboard and the tanks thoroughly cleaned. The campaign against rats continues at the docks and on board ships, 540,280 having already been slaughtered.

The London School of Tropical Medicine.

The London School of Tropical Medicine has made considerable progress. At the inaugural meeting of the winter sessions it was announced that the total number of students since the opening of the school in October, 1899, has been 849 and the number for this year 106. About two-fifths of the students since the opening of the school were in the Colonial Medical Service. A small proportion were in the employ of foreign governments, such as the United States, Holland, Venezuela, Colombia and Siam. Lord Crewe, secretary for the colonies, expressed the interest of the government in the school. They had in East and West Africa alone, some 200 medical officers who had found it part of their duty to study either at the London or Liverpool School of Tropical Medicine. The existence of the school was a great boon to the colonial office. Though Great Britain gave the enormous native population the blessings of freedom and order, it also introduced the vices of civilization—alcoholism and other scourges. The tropical schools have had an immensely stimulating influence over the whole field of medicine. They have stimulated pathology in a way which has made the last 20 years conspicuous in the annals of medicine. Among other advantages have been the magnificent example of research and the stupendous results in the saving of human life and the restoration to mankind of millions of acres of country desolated by disease.

Francis Galton.

Mr. Francis Galton, who has attained the age of 86, but still is full of mental vigor, has published an autobiography entitled "Memories of My Life." Though not a physician, he has, like the great Pasteur, done work of the greatest value to medicine. The grandson of Dr. Erasmus Darwin and the cousin and life-long friend of Charles Darwin, he has made contributions to biology only second in importance to those of the author of "The Origin of Species." His books on "Hereditary Genius" and "Human Faculty" are two of the most original works of the last century. He was a student of medicine, when in 1844, on the death of his father, he found himself with a fortune sufficient to render him independent of the profession. He gave up medicine and took to travel. He explored southwest Africa and was awarded the medal of the Geographical Society and elected a fellow. He is perhaps best known to the general public by his system of identification by finger-prints, which in our prisons has superseded Bertillon's method of measurement. No one has done so much to build up a science of heredity as applied to man, and his efforts to found a new science—Eugenics or race improvement, alone entitle him to fame. Evolution has hitherto taken place chiefly by means of natural selection, which makes for the good of the race, but takes small account of the individual. According to Mr. Galton, man, "gifted with pity and other kindly feelings" may, in the course of time, devise some means of replacing natural selection "by other processes that are more merciful and not less effective."

Early Deaths Among London Hospital Physicians and Surgeons.

The early deaths of Mr. Harold Barnard, surgeon of the London Hospital, Dr. Betram Abrahams, physician to the Westminster Hospital, and Mr. Edward Percy Paton, physician to the Westminster Hospital within a few months, have not only shocked their friends, but have drawn the attention

of the profession to the severe strain which hospital work now imposes, particularly hospital surgery. Mr. Barnard and Mr. Paton were only 41 years of age and Dr. Abrahams was only 38. Thus careers of great promise, and in Mr. Barnard's case, one of achieved eminence, have been cut short. In his presidential address to the Medical Society of London, Mr. C. B. Lockwood, surgeon to St. Bartholomew's Hospital, alluded to the stupendous increase which had taken place in the number of, and the arduousness of, modern operations. The recent deaths from overwork of junior members of the staffs of the London hospitals awakened in every one's mind feelings of apprehension. Some of those who had succumbed were strong and healthy young men; others perhaps were not well suited in physique, but long hours in the out-patient rooms, in the wards and in the teaching departments with much night work and insufficient rest and recreation were not calculated to fortify any one to withstand infection to which surgeons were inevitably exposed. The overworking of the younger men must have a prejudicial effect not only on their health, but on their scientific work. If British surgery is to maintain its position those who made it must have sufficient time and leisure to do scientific work.

The Manchester Royal Infirmary.

The Manchester Royal Infirmary, one of the largest provincial hospitals in England, has been rebuilt at a cost of $2,500,000. It has been removed from its site in Piccadilly, one of Manchester's busiest thoroughfares, to a healthy and open part of the city facing Whitworth Park and about half a mile from the Manchester University, of which it is the medical school. It has been built to specifications drawn up with the assistance of the medical board and is claimed to be one of the finest hospitals in the world, not only for the treatment, but for the study of disease and for the instruction of students. It is arranged on the pavilion plan and has been specially designed to secure quietness for the patients and for the medical and surgical staff. In addition to the teaching block in the handsome frontage of the hospital, class rooms and clinical laboratories are provided in all the units into which the pavilions are subdivided. A conspicuous feature of the plan is the number of open-air grass courts lying between the numerous pavilions in which about 50 trees have been preserved. The infirmary contains 592 beds. Of these, 70 form a gynecologic department; 32 are reserved for special purposes. The remaining 540 beds are allotted as follows: Medical, 240; surgical, 300. Of the latter, 180 are for men and 120 for women and children.

The Protection of Children.

The present government has shown an unprecedented activity in legislation in the cause of social reform. The most noteworthy of its achievements in this direction is the Children's Bill, which is now before the House of Commons. Some of its provisions have been described in a previous letter. A clause has just been passed imposing a penalty for selling or giving cigarettes or cigarette papers to children apparently under the age of 16. Mr. G. R. Sims, the famous journalist, has written a strong plea for including in the bill a clause prohibiting the sale of inflammable flannelette which causes the agonizing deaths of many hundreds of children every year. In an article headed "The Flaming Death," he points out how widely used is flannelette, in consequence of its warmth and cheapness, for the under garments of children, and how easily it is set on fire. The *Lancet* has described the death roll as "appalling." By the chemical union of certain salts with the cotton of the flannelette a perfectly safe fabric, which does not blaze on ignition but only smoulders, can be produced, but it is somewhat dearer than flannelette. Mr. Sims' plea has met with a quick response from the public. Physicians, health officers, coroners, professors, philanthropists and others have written to the press indorsing his recommendation. A clause has been added to the Children's Bill making overlying an offense. When a person, under the influence of drink over the age of 16, goes to bed with an infant under the age of 3 years and causes its death by overlying, such person will be deemed "to have neglected the infant in manner likely to cause injury to its health within the meaning of the act." At present about 1,600 infants are killed yearly by overlying.

PARIS LETTER.

(*From Our Regular Correspondent.*)

PARIS, FRANCE, Oct. 22, 1908.

The Prophylaxis Against Abortion.

The Obstetric Society of France, which met in Paris October 8 to 10, after the reading and discussion of the report of Dr. Bossi on prophylaxis against criminal abortion, decided unanimously to form an international committee to study prophylactic measures to be proposed to the public authorities. Without pronouncing on the question from the legal, social, moral or religious point of view, the society declared that it was its duty to utter a warning because of the great frequency and gravity of the accidents which result from the practice.

The League for the Welfare of Students.

The conditions of existence of students in Paris, as in many other large cities, are deplorable on account of the lack of healthfulness, of neatness, of comfort and of attractiveness of lodgings, as well as in respect to food. To remedy this state of things, a League for the Welfare of Students has just been formed under the patronage of the director of higher instruction, the deans of the four faculties, and many professors of higher branches. It is administered by a council, of which half the members are the presidents or representatives of the students' associations. Having no religious, political or social character, the object of the league is solely the improvement of the material life of the student (lodging, food, etc.). It proposes to facilitate search and choice by creating a center where demand and supply can be made known and oral, written and printed information furnished on the chief modes of installation (furnished and unfurnished lodgings, apartments in common, boarding houses, etc.), and the special features of each kind, thus making known and encouraging the best existing establishments, and bringing about desirable improvements. Its program includes everything which concerns the health and the material life of the students; physical culture, installation of sanatoria, etc., prevention and repression of maladies, and settlement of legal disputes.

Instruction in Hygiene.

Dr. Widal, in a supplement to the report on epidemics, recently laid before the Academy of Medicine demands that hygiene be made a subject of instruction and of examination in the primary and grammar school. A boy so educated, when grown up, will understand his responsibility as the head of a family; he will know that a case of roseola, of scarlet fever, of typhoid fever or of diphtheria calls for immediate disinfection; and, in learning to remember the interests of others, he will have gained the best of lessons on social relations. Professor Chantemesse insists on the necessity of perfecting the instruction in hygiene in our medical faculties, especially that of Paris. The Faculty of Lyons, for instance, with one-tenth as many pupils as the Faculty of Paris, allows its hygienic laboratory a budget twice as large; which means that the Faculty of Paris spends one-twentieth as much on the hygienic instruction of its pupils as the Faculty of Lyons. Chantemesse thinks that the fact that the mortality from contagious diseases is comparatively smaller in Germany is due largely to the expenditures made there for instruction in hygiene. At Berlin, the Institute of Hygiene receives annually 32,500 francs (about $6,500), while at Paris, where the number of students is much greater, the Faculty of Medicine only allows 2,300 francs a year to this branch (about $460), or about one-fifteenth of the amount spent in Berlin.

Hygiene and Inspection of Industry.

Besides the laws regulating the length of a day's work, the weekly period of rest, etc., we have two laws which, respectively, regulate the hygienic conditions and safety of working people in industrial and in commercial establishments. Unfortunately, these salutary laws are frequently not enforced, owing to the insufficiency of the overtasked force of inspectors to the needs of the situation. The recently published report of the Ministry of Labor for 1907 shows that, out of 522,130 establishments subject to inspection, there were 191,937 not visited in the last year. The report therefore recommends, instead of the multiplication of laws bearing on the hygiene of industry, the better application of those that exist. The Minister of Labor has just created a course of instruction in industrial hygiene particularly intended for the candidates (male and female) for the office of inspector, as well as for those who already occupy such positions.

Professor Berger Stricken with Cerebral Congestion.

Prof. Paul Berger, professor of clinical surgery, when preparing to perform an operation at the Necker Hospital, October 9, suddenly collapsed, stricken by cerebral congestion. He has just died, after a week of extreme pain, at the age of 63. His was a great personality in the surgical world, and his death will leave a gap in the faculty of medicine, for he had the passion for teaching, and possessed extremely solid erudition. He had perfected the operative technic of hernias, as well as the treatment of fractures. He devoted himself

especially to autoplastic operations, in which he had acquired great mastery.

His scientific integrity, his inflexibly rigid professional morality, his scrupulous respect for all the rules of conduct binding on a physician careful of his dignity, made for him a place apart in the surgical world, where other manners are creeping in. On his coffin, by the side of the insignia of the Legion of Honor, lay a little two-sou bouquet of violets, offered by the patient on whom Berger was preparing to operate when he was stricken by his last illness; and this humble homage of gratitude was a better reminder than any words would have been that the deceased who, hardly recovered from long months of suffering, had just resumed his service to succumb, so to speak, on the field of honor, was to the end a man devoted to duty and to his patients.

The Responsibility of the Surgeon.

At the Twenty-First French Congress of Surgery, October 5, the president, Professor Forgue, of Montpellier, discussed in his opening address a timely question, namely, the responsibility of the surgeon. Unfortunately, Dr. Forgue did not sufficiently emphasize the difference, very important legally, between the civil and the criminal responsibility of the surgeon. Even though the surgeon and, generally speaking, the physician, are rarely subject to the penalties of our criminal code, they may easily find themselves liable, under the vague and elastic provisions of Articles 1382 and 1383 of the civil code, which provide that every person who has occasioned an injury to another by any act whatever, or by negligence or imprudence, is bound to repair the injury. How many patients seek to make profit out of these two articles by claiming damages from their surgeons for alleged injuries which often consist of an insignificant contraction of a limb after a fracture, etc.!

The question of medical responsibility has enormous social importance, for, as Dr. Forgue said, logical limits and equitable guarantees for this responsibility are demanded not only for our own interests, but even more for the free progress of our art. The menace of a responsibility too liberally construed and exploited by ungrateful patients would tend toward the paralysis of all initiative and toward that inaction which, in the celebrated Laporte case, the lawyer justly characterized as the principle of *laisser-mourir* or of allowing to die. Scarcely a half century ago, our Academy of Medicine put its veto on oöphorectomy. Where should we be now if the courts of law had given their support to this opposition?

Representation of Both Sides in the Expert Testimony in Medicolegal Cases.

An allied question is that of expert testimony in lawsuits involving medical responsibility. Professor Pinard has often and rightly called attention to the disastrous consequences of inadequate expert testimony in medicolegal cases. In a recent lawsuit against a midwife accused of malpractice, Professor Pinard, with rare energy and a noble spirit of justice, came to the defense of the accused, just as he formerly defended Dr. Laporte. Pinard shows how dangerous it is for physicians that expert testimony should be given by a single physician; from the beginning of every process against a physician or midwife the opposite sides of the case should be represented in the expert testimony. Too often, in fact, the tribunal allows itself to be impressed by inadequate or incompetent expert testimony which there is nothing to contradict. Pinard does not proclaim the irresponsibility of the physician or the midwife. "We are," he says, "all fallible, and therefore ought to be held responsible. But what I desire is that we shall be judged by our peers, who alone are capable of knowing whether a fault has been committed. It is for the magistrates to apply the penalty when the wrong shall have been recognized. They will have the last word; they ought not to have the first also."

BERLIN LETTER.

(*From Our Regular Correspondent.*)

BERLIN, Oct. 14, 1908.

German Medical Press Association.

Following the example of the French and Italian associations of medical journalists, a similar association was organized in Germany in 1894. It has for its object the improvement of the character and influence of medical journalism, and the effective representation of its common interests. As the association has accomplished results that extend beyond the limits of medical journals and are of importance for the entire profession, it seems worth while to give your readers some further details at this time. The association at present includes about sixty of the most important professional journals of Germany and Austria, especially the weeklies, represented by their editors. A general meeting occurs annually, at which previously prepared reports on important subjects are read and discussed. On the basis of such reports the following important resolutions have so far been passed:

In regard to personal literary disputes which in most cases are an unnecessary burden for the journals and their readers, it has been agreed that such polemic articles shall be accepted only when they contain no direct insults, and on condition that they shall be presented to the author attacked, for an immediate reply, before they are printed. Every literary feud of this character must close with the reply of the first author.

FAKE MEDICAL WRITE-UPS.

The association has declared its purpose to use all available resources to prevent the insertion in the columns of the journal under editorial supervision of unreliable medical write-ups of proprietaries, in place of a reliable and suitable publication in the advertising columns. The editor must have the right to refuse advertisements which seem objectionable, as well as to reject original articles or reports whose acceptance is made conditional on the insertion of an advertisement. The association further refuses to sanction the advertising of remedies the composition of which is concealed by the manufacturer. In case an advertisement is refused, the editor in question shall notify the president of the association in order that all the members of the association may act in concert in regard to it.

Especially important is the resolution adopted in 1906 to prepare a "black list" of authors who make a business of writing papers for pay, in the interests of the manufacturers, on the chemical or other products of their factories. The writings of such authors are neither to be published in any of the journals belonging to the association nor summarized for their columns in case they have appeared in other papers. This resolution has seemed necessary, because with us and also surely in other countries, and especially in yours, there is a group of unscrupulous physicians who prepare papers about new remedies without having tried them, indeed, without having the clinical material at their disposal on which to try them, and they do this exclusively for pecuniary profit. Such physicians offer their services in this line systematically for a larger or smaller remuneration to the various manufacturers. These write-ups are then spread broadcast by the manufacturers as advertisements to start a propaganda for preparations of more or less value, since printed statements never fail to make an impression on the credulous medical and lay public. No proof is needed that this custom is injurious to the interests of science and of the sick. By the resolution adopted by the German Medical Press Association, a surely not ineffective means was thus obtained for reducing this evil, and the results so far have been quite manifest in this direction.

REMUNERATION FROM MANUFACTURERS FOR TRIALS OF THEIR REMEDIES.

At the last general meeting, which as usual took place with the "Naturforscher Congress" at Cologne, the association took up the question how far the scientific testifying in respect to pharmaceutical preparations may go, and whether it is proper for physicians to accept remuneration from the manufacturing chemists for such reports. The resolutions voted by the association on this question are as follows: "It is to be recognized that the investigation of new, synthetically produced remedies, by animal experiment and in the clinic, is in the interests not only of the industry involved, but also for the progress of theoretical and practical therapeutics. But it is also for the interests of these industries as well as for therapeutics that only valuable papers shall be published, only those which are the result of exact research and observation and free from exaggerated claims (*Schönfarberei*). Unreliable, biased or consciously fraudulent articles on medical preparations are to be most vigorously fought. It is the duty of editors to reject articles that are doubtful in these respects, and also to refuse every article that is not presented by the author himself or by the head of the institution in which the work has been done. It is allowable to mention the firm which makes the preparation, as also the ordering of reprints for advertising purposes. The decision of the question whether a remuneration shall be asked or accepted for experimental or clinical testing of a pharmaceutical preparation must, considering the present marked difference of opinions on the subject, be left to the ethical feeling of each scientific worker or to the decision of the director of the institute. The professional press has only to make the point clear that in regard to the publication of articles on medicines, no distinction is to be made except be-

tween reputable and disreputable articles, and the question of remuneration from the manufacturers for such work is not to be taken into consideration as a decisive factor in this respect. It is, however, to be understood that the payment of the fee must not be made in any way dependent on the result of the publication of the article. Inspection of the article by the firm before it is printed is permissible, and also a reservation on the part of the firm that it is not compelled to permit the publication of an article so long as the preparation has not been marketed and so long as a dissenting opinion regarding the preparation has not been published from another source. It is to be specified in the publication that the work was carried out at the request of the firm." [See also abstract 65 on page 1648 in this issue.]

Home for Incurable Consumptives.

It was first advocated by B. Fränkel, and again with repeated emphasis by Robert Koch, that incurable consumptives should be removed from their families and unfavorable surroundings and placed in special hospitals. This requirement is based on the general principle that in the eradication of any infectious disease the first essential is to remove the source of infection. In phthisis this lies in the expectoration, and in spite of all hygienic precautions the contamination of other individuals can not be prevented if the bacilli contained in the sputum gain access to food or are inhaled. It is indeed not to be denied that if individuals harboring tubercle bacilli in their sputum could be completely and permanently isolated, it would prove a most effective measure against the spread of pulmonary tuberculosis. The carrying out of this program in practice is not an easy matter, since patients of this sort dread to enter such homes for incurables, from which no one departs alive, so that they have been named "death houses for consumptives," *Sterbehäuser*. So far the repeated trials of these homes for consumptives have failed for want of patients.

Of late, the erection of such homes for the incurable has been abandoned, and attention turned to building special hospitals for consumptives in which, besides the curable cases (for which alone the public sanatoria are reserved), also incurable cases can be received and permanently cared for. The city of Berlin contemplates the erection of such a special hospital, with 500 beds. Such a hospital would afford the great advantage that it would relieve the general city hospitals of the burden of the incurable consumptives who take up the room needed by other patients and are a continuel burden on the physicians and nurses.

Deterioration of the Physical Development of Country People and Their Food.

By a decree of the Prussian minister of education, the medical councils are required to give an opinion on the question whether a deterioration in the physical development of the rural population has been observed, and whether it can be connected with the lessened consumption of milk and buttermilk. The occasion of this is the observation made in several places that, in connection with the increase of dairies, the rural population are suffering in their food and development because, in consequence of the sale of the available whole milk, the demand of their own households for milk is no longer fully supplied, and the use of the less valuable skim milk or inefficient substitutes is favored. From the observations made in Switzerland it is feared that the resisting forces may be reduced in consequence of the lack of the strength-giving milk in the diet. This apprehension has not yet been confirmed so far as Prussia is concerned, but in the meantime further data relating to the subject are to be furnished by the medical councils (*Aerztekammer*).

VIENNA LETTER.

The Thalassotherapeutic Congress.

The International Congress on Thalassotherapy was held at Abbazia, an Austrian south coast health resort, September 25-28. It was attended not only by numerous physicians from the different seaside places in Austria, Germany, France, Holland, Belgium and Italy, but also by several eminent men of science, like v. Leyden, who thus indicated their belief in the future of thalassotherapy. From the large number of papers read before the congress, only a few may be mentioned here which appeal more to the general practice. The indications for and the nature of thalassotherapy were explained by Drs. Nussbaum, Gol, Glax, Kurz and Baudouin. Three factors are concurring to bring about the favorable effect of a protracted stay at a suitable seaside place: The fresh pure air, with its abundance of ozone and lack of dust, the sunshine, to which the bather is generally exposed and the chemicophysical action of the sea water. As regards the last-named factor, a distinctive feature of the various sea places is the temperature and the specific gravity of the water. While in some places, especially on the North Sea, the temperature hardly ever exceeds 68 F., with a specific gravity of the water of 1.05, the Adriatic has a density of the water of 1.12-1.30, sometimes reaching even considerably higher figures. Consequently, a stay of 20 minutes in the water is considered a long one in the North Sea, while in the Adriatic an hour may be safely passed in the water, since its temperature is often more than 77 or 80 F. Papers on the influence of the sea climate on tuberculous affections were read by Drs. Hennig and Mol, as well as Professor von Leyden. The leading points of the papers and of the discussion which ensued showed that all authors thought that patients with incipient tuberculosis of the respiratory organs and surgical tuberculosis, that was not too far advanced, would derive material benefit from a stay in a cool, not too breezy seaside place.

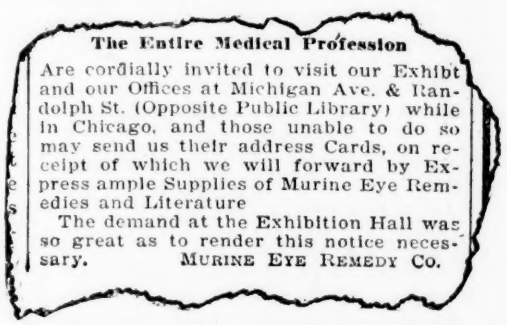
Pharmacology

MURINE EYE REMEDY.

A Nostrum with an Alleged College of Ophthalmology for a Side Line.

To be all things to all men is the alpha and omega of successful advertising. An address to Bowery toughs in terms of Chesterfieldian elegance not only would fail to carry conviction, but might lead to mob violence on the part of the audience. This principle, which is recognized by all astute advertisers, is beautifully exemplified in what follows.

Murine Eye Remedy is an "eye lotion" advertised in street cars, on bill boards and fences and in the daily press. During the Chicago session of the American Medical Association the promoters of this nostrum conceived the idea that it might as well work the medical profession in a way that has become classic among certain manufacturers. The following appeared in Chicago newspapers:


The Entire Medical Profession
Are cordially invited to visit our Exhibt and our Offices at Michigan Ave. & Randolph St. (Opposite Public Library) while in Chicago, and those unable to do so may send us their address Cards, on receipt of which we will forward by Express ample Supplies of Murine Eye Remedies and Literature
The demand at the Exhibition Hall was so great as to render this notice necessary.
MURINE EYE REMEDY CO.

To lead the public to infer that this company had an exhibit at the American Medical Association meeting was a masterstroke of advertising mendacity. The fact that a large proportion of the laity has confidence in physicians is recognized by the Murine Eye Remedy Company in its advertising to the general public, and the approval which physicians accord their preparation is enlarged on.

To those unstable individuals, however, who embrace the various 'pathies and 'isms, and to whom a decent medical man is a *bête noire*, this company appeals through the various freak publications which pander to this class. In one of the best known of this type of periodicals is a three-quarter page advertisement of Murine—the balance of the page being taken up with quotations from Ernst Renan on religion, Wordsworth on nature and Swedenborg on love. The antimedical faddists are told that "a group of business and professional men in Chicago recently banded together to give an ailing public an eye lotion that will further the interests of humanity." How this altruistic spirit does pervade the "patent medicine" fraternity! Everything is done for "humanity"—providing "humanity" will pay the bill! "Of course," continue our eye remedy friends, "many of the Learned Guessers object to this lotion, saying 'things' about it whenever they get the chance—that's natural." Perfectly! "So let the Learned Guessers howl—to howl is an M.D.'s privilege."

WHAT MURINE WAS—AND IS.

Before the advent of that potent influence for commercial veracity, the Food and Drugs Act, the carton in which this "eye water" was sold read as follows:

MURINE

A POSITIVE CURE

FOR SORE EYES, RED, INFLAMED AND ITCHING LIDS.

Since that law has become operative and a lying label has become illegal instead of merely immoral, the carton bears this legend:

MURINE

A RELIABLE RELIEF

FOR SORE EYES, RED, INFLAMED AND ITCHING LIDS.

In the pamphlet which accompanies each bottle of the preparation, we are told that Murine is "compounded by Eye Specialists who have used it successfully in their private practice as Oculists for over twenty years." "Murine is Indicated in Cases of Weak Eyes, Inflamed Eyes, Tired Eyes, Strained Eyes, Children's Eyes, Itching Eyes, Blurring Eyes, Red Eyes" and numerous other kinds of eyes—in fact, Murine is "a Favorite Lotion for those who wear Artificial Eyes."

One is carried back to that delightful character of Mark Twain's, "Colonel Sellers," who was about to put on the market his "Infallible, Imperial, Oriental Optic Liniment and Salvation for Sore Eyes—the Medical Wonder of the Age! Small bottles fifty cents, large ones a dollar."

The composition of such a unique and universal remedy for all the ills the eye is heir to will naturally interest physicians. Analyses made in the Chemical Laboratory of the American Medical Association gave the following results:

CHEMISTS' REPORT ON MURINE.

Murine as found on the market to-day is an amber-colored liquid, practically odorless, having a slightly bitter taste, and giving an alkaline reaction to litmus. From the examination detailed below,[1] we conclude that Murine is essentially an aqueous solution of borax (2.6 gm. per 100 c.c. or 12 grains to the fluid ounce), containing a trace of berberin or some golden seal preparation.

It is interesting to note that Murine is variable in composition. A sample examined Nov. 30, 1907, contained a carbonate and responded to alkaloidal tests very feebly; while the product to-day contains no carbonate and shows definite traces of alkaloids.

One wonders to what extent the therapeutic action of Murine is due to the price charged for it. If instead of paying $1.00 an ounce—the price charged—the public could buy it for 5 cents a gallon—the estimated cost—would the removal of such a potent psychic influence have any effect on the virtues of the preparation? The question is not one to be lightly disposed of or settled off-hand.

In all seriousness, however, the law which permits men engaged in such a business to continue the practice of medicine seems lamentably weak. It would seem that the medical profession, if not for its own self-respect, at least for the protection of the public, should have some means of making clear to that public the difference between ethical practitioners of medicine and those who, posing as such, conduct a business whose success lies in humbugging and deluding the innocent.

ITS PROMOTERS AND THEIR "COLLEGE."

The president of the Murine Eye Remedy Company is James B. McFatrich, M.S., M.D., an eclectic physician of Chicago; the treasurer is George W. McFatrich, M.D., also an eclectic practicing in Chicago. O. F. Hall is the secretary. These three men are also said to be the directors of the company. The McFatrichs are the originators and practical owners of the business.

In addition to their "patent-medicine" interests, the McFatrichs are, respectively, the president and secretary of a school of spectacle fitters rejoicing in the sonorous title of the "Northern Illinois College of Ophthalmology and Otology." This seat of learning confers no fewer than seven degrees, to-wit:

FELLOW OF OPTICS
BACHELOR OF OPTICS
DOCTOR OF OPTICS
BACHELOR OF OPHTHALMOLOGY
MASTER OF OPHTHALMOLOGY
DOCTOR OF OPHTHALMOLOGY
HONORARY DEGREE

The diplomas issued are, it is needless to say, most ornate, and are well calculated to inspire the mere "layman" with a healthy respect for the erudition of their possessors. As the "college" catalogue states, most of the diplomas "frame handsomely 28 x 28 inches."

Why the term "otology" is added to the title of the "college" has not yet been determined. As far as can be learned, the eye is the only organ which is even supposed to be studied. Possibly "otology" is thrown in for good measure. Incidentally, we would suggest that as fitting of glasses is taught instead of ophthalmology, the latter term would seem to constitute misbranding—but, then, the Food and Drugs Act doesn't apply here.

The catalogue is profusely illustrated with reproductions of the diplomas, and full-page half-tones of the "professors" and of the class-rooms. The pictures show large advertisements of "Murine" on the walls of the class-rooms, the general office being particularly well supplied with these works of art.

The "college" itself is hardly as imposing as its name might indicate. The illustrated cover of the catalogue and the catalogue itself convey the impression that the "Northern Illinois College—", etc., is located in the Masonic Temple, one of the largest office buildings in Chicago. As a matter of fact, it is on the third floor of an old building in the wholesale grocery district, and the Murine Eye Remedy Company occupies the same floor. The "college," in fact, appears to be a sort of annex to the "patent-medicine" concern. The only apparent connection between the college and the Masonic Temple is that its "President and Professor of the Principles of Ophthalmology and Otology"—James B. McFatrich, M.S., M.D.—and its "Secretary and Professor of Clinical and Didactic Ophthalmology and Otology"—George W. McFatrich, M.D.—have their offices in the latter building.

These gentlemen evidently believe that not only "to howl is an M.D.'s privilege," but also that to commercialize the profession of medicine is equally his privilege. Whether selling a "course" in optics with a "diploma" thrown in for $25.00, or dispensing Murine Eye Remedy at $1.00 an ounce, or treating patients professionally—all is grist to their mill.

And the public? Well, P. T. Barnum is authority for the statement that it likes to be humbugged. The danger in the indiscriminate use of this eye water is probably a negative one in most cases. It may, however, by lulling the patient into a false sense of security, and by causing him to temporize, be a very real one. This is realized when we see its use recommended in ophthalmia neonatorum and other conditions equally serious. But "the law allows it," and, as our old friend Colonel Sellers remarked, "There's millions in it."

1. Qualitative tests of murine showed the presence of borax and some organic substance, responding to the general alkaloidal tests. Estimation by the method of Thomson (*Jour. Soc. Chem. Indust.*, xii, p. 432), in which the agreement between acidimetric and alkalimetric titrations showed that the solution contained borax as such, demonstrated the presence of 12 grs. to the fluid ounce, or 2.59 gm. per 100 c.c. of crystallized borax.

The color of the preparation suggested the possible presence of golden seal, which was tested for as follows: Twenty-five c.c. of Murine was acidified and then extracted with chloroform; it was then made alkaline and again extracted with chloroform. The second extraction, evaporated to dryness, left a yellow residue weighing 0.0046 gm. or 0.0183 gm. per 100 c.c. This residue was soluble in acidulated water, and the addition of an aqueous solution of potassium iodid to the solution a yellow flocculent precipitate was formed, a reaction very characteristic of berberin. The filtrate from this precipitate yielded a dark-brown precipitate with iodin, demonstrating the presence of an alkaloid. The precipitate was decomposed with sodium sulphite and again extracted with chloroform, and the chloroform extract evaporated to dryness. The residue thus left was slightly yellow and responded to alkaloidal tests. The reactions thus obtained indicate that Murine contains berberin or a preparation of golden seal.

A German Opinion of the Antinostrum Work.

In a letter from the United States in the *Deutsche medizinische Wochenschrift*, September 10, after describing the Chi-

cago session of the American Medical Association the writer says:

"THE JOURNAL of the A. M. A. has over 50,000 subscribers. This will make a peculiar impression on the editors of your medical journals. The enormous influence of THE JOURNAL is clear, especially when one realizes that every week several pages are devoted to the campaign against quackery and nostrums. On account of its large circulation, THE JOURNAL is able to reject the advertisements of secret medicines, and the more reputable competing journals are compelled to follow its lead to a greater or less extent. Dozens of the minor medical journals are, of course, obliged to accept advertisements of this kind; many, in fact, draw their subsistence from this source, and some are actually merely what are called 'house organs'—just the same as in Germany, including medical write-ups to order for pay."

Correspondence

Dr. Hamill Not Dead.

GUTHRIE, OKLA., Oct. 27, 1908.

To the Editor:—In THE JOURNAL, October 10, page 1275, appears the death notice of Dr. John Ransom Hamill of this place. I am happy to state that this is a mistake. While Dr. Hamill has been very ill for a long time, he is now convalescing nicely and hopes to be out again soon.

The report got out here in Guthrie that Dr. Hamill had died on September 25, but how it became circulated no one seems to be able to tell. E. O. BARKER.

A Courteous Critic.

NEW YORK, Oct. 29, 1908.

To the Editor:—Your remarks on the death of Prof. Dr. v. Poehl are both indecent and offensive. I do not intend to employ servants to circulate scurrilous statements, nor do I care to receive them through the mails.

REYNOLD WEBB WILCOX.

[COMMENT: We publish the above as a model of the decent and inoffensive in correspondence. The matter referred to appeared two weeks ago in the letter of our Berlin correspondent, a man who stands high in the profession in Germany, and who is in a position to know whereof he writes. *De mortuis nil nisi bonum* is a rule that should ordinarily be observed. Probably, however, when our Berlin correspondent saw Spermin (Poehl) advertised in illustrated weeklies along with lost manhood restorers and bust developers, he felt that this rule did not apply. Professional nostrum promoters can hardly expect to receive obituary notices which will be altogether comforting to their friends and sympathizers.—ED.]

Epilepsy Affected by Intercurrent Disease.

BALTIMORE, Oct. 30, 1908.

To the Editor:—THE JOURNAL, October 24, refers to Dr. S. Weir Mitchell's request for information concerning the effect of certain diseases on epilepsy.

In "Epilepsy and Its Treatment" (W. B. Saunders Co., 925 Walnut St., Philadelphia), pages 387-388, will be found data on this point under the heading, "The Influence of Concurrent Diseases on Epilepsy." Mention is made of several diseases, including malarial fever, typhoid fever, erysipelas and diphtheria, the influence of which on epileptic attacks was apparently marked. Since that book was issued, other instances have come to my attention in which an internal disease arising in an epileptic checked the manifestations of that disease completely for longer or shorter periods. In some cases, when pulmonary tuberculosis arose, and the disease was active from the outset, the attacks of epilepsy did not recur at all for more than three years. Scarlet fever will have the same effect and so will pneumonia.

The study of this question is interesting in that it may indicate a method of treating epilepsy, which is but little cultivated or understood to this time.

WILLIAM P. SPRATLING.

Dilatation or Volvulus of the Stomach.

DENVER, Oct. 27, 1908.

To the Editor:—I have read with much interest a clinical note by Dr. W. R. Houston entitled "Acute Dilatation of the Stomach, Report of an Unusual Case," in THE JOURNAL, October 24, page 1424.

Taking it for granted that Dr. Houston recorded every symptom of importance—namely, that the woman was taken with sudden abdominal pain which was referred to the upper quadrant, that the distention was at first more marked on the right side and later became universal, and that the heart and liver were considerably displaced upward—I beg to submit my opinion that the case was not one of dilatation of the stomach, but of volvulus of the stomach. The differential diagnosis between dilatation of the stomach and that of volvulus of the stomach is the absence of vomiting in the latter, and the presence of copious vomiting in the former. The facts that vomiting is not recorded, that ineffectual attempts were made to introduce a stomach-tube, that water administered by the mouth was regurgitated after ten or fifteen minutes, that when the wall of the stomach was punctured there was a loud explosion of gas, and that only half a pint of dark acid contents was found in the stomach, conclusively prove that Dr. Houston unknowingly recorded the first case of volvulus of the stomach in this country. The symptom-complex of Dr. Houston's case comprises every detail characteristic of volvulus of the stomach as recorded in an article under the same title published in *American Medicine*, Oct. 31, 1903, vi, 709.

C. D. SPIVAK.

The Work of the National Commission on Country Life.

ITHACA, N. Y., Oct. 28, 1908.

To the Editor:—I am much interested in the editorial in THE JOURNAL, August 22, on the work of the Commission on Country Life. This commission is appointed, not for the purpose of investigating the farmer or technical agricultural questions, but to study the general social, sanitary and economic conditions of country life. The commission will not be able in its brief existence to make any thorough investigations into any of these questions, but it will be possible for it to arrive at a good estimate of rural conditions, and to secure the opinions of the best men as to what needs to be done in respect to the larger questions of country life. The commission is specially anxious to secure the cooperation of those persons who are competent to give opinions in regard to the sanitary conditions of the rural country. In this respect THE JOURNAL could render the commission great aid by suggesting how such opinions could be secured and by itself securing them through correspondence with its subscribers. We should like to have these questions discussed also in the various medical societies. Possibly you can suggest the best way whereby discussions of this kind could be set in motion. Perhaps these discussions could best be started through the medical journals themselves.

The commission will be very glad to be put in the way of receiving such information as the medical journals may collect in regard to the sanitary and dietary condition of the open country. The commission will soon begin to hold hearings in different parts of the country. We shall hope that practitioners who have had special touch with country conditions will be present at the hearings and give us the benefit of their opinions.

We should also be glad if physicians and sanitarians would care to join the commission on any part of its journey. We are hoping, for example, that Dr. Stiles will be with us in the southeastern country, in order to point out the effect of the hookworm on the people in certain communities.

We shall be glad to receive any suggestions from the medical profession in regard to the general subjects on which the commission is to make inquiries.

L. H. BAILEY,
Chairman Commission on Country Life.

Book Notices

DISEASES OF THE SPINAL CORD. By R. T. Williamson, M.D. (London), F.R.C.P., Assistant Physician, Royal Infirmary. Cloth. Pp. 432, with illustrations. Price, $5.50. London: Oxford University Press, 1908.

This is an entirely modern and fairly complete review of the subject, in 432 pages. The first sixty pages, three sections, are devoted to a general anatomic, histologic and physiologic introduction. Section IV, twenty-seven pages, is devoted to the symptoms of spinal disease, and while many of these symptoms are sometimes caused by other affections, their enumeration is germane to the subject, and this chapter, it is to be hoped, may serve to clarify in some medical minds the rather cloudy apprehensions of such ordinary things as the knee-jerk, the Achilles jerk and the plantar reflex. It might be noted that though the excellent table relating to the plantar reflex is taken from Collier, Dr. Williamson gives all credit of discovery to Babinski, whereas it is well known that, following a suggestion of Sir William Gowers, Collier covered the same ground as did Babinski, at the same time and independently of the French investigator. He had not the good fortune to publish his findings quite so early.

A short section, which doubtless will often be useful, is devoted to electric examination, but Dr. Williamson, like most others, fails to simplify the subject. Just why lumbar puncture should be considered in this section is not obvious, but the matter is good and also timely. When it was found that lumbar puncture was not of much therapeutic value, its use in this country almost ceased to arouse interest. In selected cases its diagnostic value is undoubtedly great.

In his consideration of the diseases of the spinal cord, Williamson adopts a very novel grouping—a grouping quite unscientific, but exceedingly practical, especially for the general practitioner, namely:

1. Diseases in which the prominent symptoms are those of a transverse lesion of the cord.
2. Diseases in which the prominent symptoms are those of atrophic paralysis.
3. Diseases in which the prominent symptoms are those of spastic paresis or paralysis.
4. Diseases in which the prominent symptoms are those of ataxia.

To put in the same group such pathologically diverse affections as spinal hemorrhage, acute myelitis, tumor of the cord and spinal caries is certainly to do violence to the feelings of him who insists on pathology as the basis of nosology. Indeed, at first glance, such a classification seems almost grotesque. But in practice a patient does not present himself as a sufferer from inflammation or neoplasm or degeneration, but as one afflicted with paraplegia, hemiplegia, ataxia or pain, as the case may be. Whether he wishes so to do or not, whether he is conscious of it or not, the practitioner must, in his mind, make and use some such grouping as Dr. Williamson has formally made in this book.

The text of the chapters on these diseases is excellent; in the main, clear, concise, sufficiently full, not redundant, up to date in pathology, symptomatology and treatment. An exception must be made in that part devoted to treatment of spinal cord syphilis. No mention is made of intramuscular or intravenous injections of mercury, and Williamson, like so many of his European colleagues, seems to know little or nothing of such doses of iodid as are currently used in this country. To consider sixty grains a day as a maximum dose is incomprehensible to most of us. To be sure, Williamson does mention "a much larger quantity," but as if alluding to an apocryphal gospel. A brief but adequate description of the Frenkel exercises for tabes will be of great assistance to those not familiar with Frenkel's book.

That part of Section X devoted to combined disease of the posterior and lateral columns of the cord is somewhat disappointing. While the ataxic paraplegia of Gowers, the subacute degeneration of Russell, Batten and Collier, the diffuse degeneration of Putnam, the cord changes of pernicious anemia, etc., are all described, and while Dr. Williamson evidently recognizes their intimate relationship, apparently he has not had quite the courage of his convictions, and so describes separately and as separate things what are simply varieties of the same thing, or the same thing under different circumstances. Section XIII, eight pages, is a very sketchy and entirely inadequate consideration of traumatic lesions of the spinal cord; a section which would much better have been left unwritten, as it is of little practical value.

On the whole, this book is a good book, a safe book, and can be heartily recommended to practitioner and student. The illustrations are good, nearly all original, and are truly illustrative.

In the preface, Dr. Williamson recommends certain medical journals. Omission of the *Revue Neurologique* is surely an oversight, because it certainly is not excelled by any neurologic publication.

PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS. By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Gross College of Medicine, Denver. Cloth. Pp. 778, with illustrations. Price, $7.00. Philadelphia: W. B. Saunders Co., 1908.

Dr. Bonney's avowed aim is to present a volume for the general practitioner and to produce a work essentially devoted to the clinical phases and practical considerations of pulmonary tuberculosis. We believe that Dr. Bonney has given us one of the best volumes in English on this topic.

About one-eighth of the text is allowed to the etiology, routes of infection and pathology. The remainder of the work is directly clinical and intensely practical, embracing the most detailed description of the modes of onset, symptomatology of the confirmed stage of the disease, the complications, diagnosis and treatment. The physical signs are carefully considered, both in their verbal description and their illustrated exposition by numerous cuts and *x*-ray photographs.

With a few chapters the subjects of which furnish a good field for strong, elaborate treatment, one feels a little disappointed, as, for instance, those on miliary tuberculosis, tuberculous pleurisy and tuberculous peritonitis.

Perhaps the strongest section is that on therapy. Dr. Bonney has been at great pains to detail clearly and to elaborate every minute point in the every-day management of pulmonary phthisis. In all, this contribution is careful, systematic, scientific and eminently practical.

AN ALABAMA STUDENT, and Other Biographic Essays. By William Osler, M.D., F.R.S., Regius Professor of Medicine, Oxford. Cloth. Pp. 334. Price, $2.50. New York: Oxford University Press, American Branch, 1908.

This is a series of addresses delivered during the years 1894-1906 before various societies, all but two—those on Sir Thomas Brown and on Harvey and His Discoveries (Harvey Oration, 1906) having been delivered in this country. "The Alabama Student," who gives the title to the book, was Dr. John Y. Bassett of Huntsville, Alabama, who died in 1851; "a man of whom you have never heard, whose name is not written on the scroll of fame, but who heard the call and forsook all and followed his ideal." The story of Bassett is told mostly by quotations from his letters and from his writings. It is the story of a country doctor who was a remarkable man in many ways, but especially in the courage he displayed and the sacrifice he made in his determination to perfect himself for his chosen work. This determination caused him, after building up a practice, to give this up and leave wife and children, whom he dearly loved, and go to Paris, at that time the Mecca for medical men. On his return he seems to have settled down among his old patients, applying the new knowledge for their benefit, but dying of consumption at the early age of 46—dying practically unknown outside of his own little sphere of action. And it seems he would not have been "found" by Osler had it not been for two articles which were published in *Southern Medical Reports*, 1850-1851. These and his letters show him to have been an unusual man; and probably had he lived the allotted time, he would not have been left to be discovered by someone in the twentieth century, but the world of fifty years ago would have known of this Alabama student.

Another doctor of the olden times whose name and deeds are not so well known as they should be was Elisha Bartlett, a Rhode Island philosopher. While born in Rhode Island, he seems to have spent more time out of than in his native state; and unlike our Alabama student, this Rhode Island philosopher

seems to have moved around considerably. But this was because he was one of the group of peripatetic medical professors, as Osler describes them, who did more teaching than practicing, and did that teaching in many institutions. Bartlett taught in nine, one being the medical department of the Transylvania University, away out west, at Lexington, Ky.

The other Americans who are subjects of these biographic essays are Oliver Wendell Holmes, William Beaumont—under the title "A Backwoods Physiologist"—William Pepper and Alfred Stille. Other addresses are on "Thomas Dover, Physician and Buccaneer," "Keats, the Apothecary Poet," John Locke, Sir Thomas Browne, M. Louis—in "The Influence of Louis on American Medicine"—and Frascatorvius.

The lives of successful men are always a stimulus and make profitable reading. Aside from the information they contain, there are few records of the lives of such men but contain some one or more lessons that we can take to heart. This is especially true when the men are of our own calling, as in this case. Osler has a happy faculty of presenting any subject, and this is emphasized in these biographic sketches. They are therefore interesting as well as instructive.

THERAPEUTICS; ITS PRINCIPLES AND PRACTICE. By Horatio C. Wood, M.D., LL.D., Emeritus Professor of Materia Medica and Therapeutics in the University of Pennsylvania. Revised and rewritten by Horatio C. Wood, Jr., M.D., Associate Professor of Pharmacology in the University of Pennsylvania. Fourteenth Edition. Cloth. Pp. 778, with illustrations. Price, $5.00. Philadelphia: J. B. Lippincott Co.

The issue of the fourteenth edition of any medical text-book indicates that it has filled a needed place and that it must have been kept up so as to answer the demands occasioned by the advance of science. The last edition of Wood's text-book shows more extensive alterations than does any previous edition for many years. The work has been done by Horatio C. Wood, Jr. The preface to the first edition presents a strong plea for a rational therapeutics founded on facts derived from experiment. The work has always been a good representative of the existing state of science; and it continues to be such a representative, for in the present edition reports of recent discoveries have been carefully incorporated.

The arrangement of the book is such as to facilitate study. Instead of resorting, as some text-books do, to the easy but unscientific method of alphabetic classification, Dr. Wood gives one based on the pharmacologic action of medicines. On the other hand, the individual drugs are considered separately, which we believe is better for the practitioner, if not for the student. It is disappointing to search a text-book for facts regarding the action of a drug to find only general statements regarding the group. The arrangement of the text is such that the important facts which the student should learn are given in larger type and the details which interest the special investigator are placed in fine print. An excellent feature is the full bibliography placed at the end of the sections. The references are brought up to 1906. The problematic value of digestant remedies is insisted on.

Since therapeutics is the aim of practical medicine, and since correct therapeutics must be based on the science of pharmacology, it is to the interest of every practitioner to review frequently and thoroughly the scientific bases of his therapeutic measures. We know of no treatise that will serve his purpose better than the book before us.

THOMAS LINACRE. By William Osler, M.D., F.R.S., Regius Professor of Medicine in the University of Oxford. Cloth. Pp. 64. Price, $0.75. Cambridge: University Press, 1908.

This little work constitutes the first of a series of annual Linacre lectures at Cambridge, substituted by St. John's College (with which the original foundation rests) for the lectureship rendered vacant on the translation of Dr. Donald MacAlister from Cambridge to Glasgow. Osler appropriately devotes his lecture to a brief biographical note of the great English physician and then, after the style that it is fashionable to term an "appreciation," discusses Linacre as a medical humanist and as a grammarian. The little volume closes with an account of the Linacre foundations—the Linacre lectureships at Oxford and Cambridge, and the much more important Royal College of Physicians of London, of which Linacre was not only one of the founders, but in 1518 the first president. The work is embellished with two portraits of Linacre and six reproductions of title pages of the more famous of Linacre's works. It collects from many widely scattered sources material concerning a well-known but poorly known-of man, and will, therefore, be a welcome addition to the library of the student of medical biography and history.

ESSENTIALS OF SURGERY. By Alwyne T. Compton, F.R.C.S. Cloth. Pp. 428, with illustrations. Price, $1.50. Chicago: W. T. Keener & Co., 1908.

This compend of over 400 pages is unusually complete, much information being expressed in the most compact manner. There are a number of good diagrammatic illustrations and the differential diagnostic tables are very useful. It will lend itself very well to quick reference.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

DIASTASIC POWER OF SALIVA.

CHICAGO, Oct. 22, 1908.

To the Editor:—1. Is the use of diastase, malt extract, etc., founded on any experimentally proved lack of diastasic power in the saliva?

2. In deciding on the use of malt extract, would it be practicable for the physician to test the saliva, and make this his guide in the use of the remedy?

3. In what proportion of cases is the saliva deficient in diastasic power?

4. What is meant by amylaceous dyspepsia? Is there any proof that undigested starch in a finely divided condition is irritating to the stomach? X. Y. Z.

ANSWER.—1. No. The therapeutic use of diastase or malt extract did not result from any line of experiment, showing diminished activity of the ptyalin, but from the well-known test-tube effect of diastase on starch and the assumption that a starch ferment would be useful in cases of starch indigestion and bacterial fermentation in the gastrointestinal tract. The physiology of salivary secretion and starch digestion would seem to contraindicate the use of diastase. It is generally accepted that, normally, salivary secretion results from reflex stimulation of the secretory nerves during mastication; and psychic conditions also seem to be a factor. Recently Nelson and Lewis have shown by experimenting on dogs that the secretion of ptyalin occurs on a starch diet, and furthermore, diminishes on a meat diet. Both Cannon and Grützner have demonstrated that after food enters the stomach, it remains in the fundus in a quiescent state for from twenty to forty minutes. Within the center of this mass, which has been mixed with the saliva containing the two ferments, amylase and maltase, starch digestion may progress because it is protected from the acid gastric juice; but as soon as the hydrochloric acid of the stomach comes in contact with the diastase the ferment action is at once destroyed. In order to imitate the normal process it would be necessary to mix each mouthful of food with mucus, simultaneously combining it with the artificial diastase to protect the ferments from the acid secretion in the stomach. If the artificial diastase be taken before or after meals it would not mix with the food mass, but would come into immediate contact with the gastric juice and its activity would be destroyed. The researches of Croft Hill first demonstrated the reversibility of ferments. He used maltase in his experiment and showed that an excess of this diastase not only stopped all digestion of starch, but produced a synthesis of that part already hydrolyzed.

2. The digestive power of the saliva on starch may be tested by diluting the saliva in various degrees and noting the time it takes to form erythrodextrin and achroodextrin, but this test gives no practical results, inasmuch as the strength of the secretion varies and no estimate can be made clinically of the total quantity formed.

3. It is rather rare to find cases in which the saliva is deficient in diastasic power, and furthermore, an increase of amylase and maltase is also rare.

4. Amylaceous dyspepsia is a crude unscientific term—a misnomer applied to symptoms arising from fermentation, flatulence, etc. Even when exact examinations are made, such as the demonstration of undigested starch in the feces, one can not conclude from such an examination that there is a deficiency of starch ferments. Excessive acidity in the stomach, we may conclude, interferes with starch digestion, but motor insufficiency in the stomach is more often a responsible factor for so-called amylaceous dyspepsia.

FORMULA OF STARCH AND LAUDANUM ENEMA.

FLEMINGTON, W. VA., Oct. 23, 1908.

To the Editor:—Will you kindly publish in THE JOURNAL the method of preparing the starch and laudanum enema?

I. DAVISSON.

ANSWER.—There is no official formula for this enema. Few authors of text-books give specific directions, but state that a dose of laudanum varying from fifteen minims to one fluidram should be given in starch water. Yeo says: "Each enema should consist of fifteen minims of laudanum with an ounce of cold mucilage of starch." Mucilage of starch should be made by rubbing up starch to a paste with cold water, pouring this into boiling water, and continuing the boiling until a clear, thin mucilage results. The laudanum should be added after the mucilage is cool. The dose should be varied according to the age of the patient. The enema should not be repeated oftener than once in two hours.

LANTERN SLIDES FOR CUTANEOUS DISEASES.

STETTIN, GERMANY, Oct. 5, 1908.

To the Editor:—In THE JOURNAL of August 22 I found a query asking where lantern slides could be obtained to illustrate contagious diseases. The *moulcur* of the late Dr. Lassar's clinic has a very beautiful collection of lantern slides, nicely colored, and sells them at $1 apiece. His address is, I think, or can be obtained from Dr. Lassar's clinic, Berlin, N. W. Karlstr, 19., Mr. Kasten.

W. LEHMANN, M.D.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Oct. 31, 1908.

Grubbs, R. B., capt., ordered from Ft. McIntosh, Texas, to Ft. Sam Houston, Texas, for observation and treatment.

Huber, E. G., lieut., relieved from further duty with Co. C, H. C., at General Hospital, Washington, D. C., and ordered to Ft. Slocum, N. Y., for duty.

Rhoads, T. L., capt., ordered to Washington, D. C., for examination for promotion.

Quinton, W. W., capt., granted an extension of two months to his sick leave of absence.

Lynch, Charles, maj., ordered to inspect Hospital Corps Detachments of the New York National Guard in New York City.

Bingham, E. G., capt., ordered to inspect Hospital Corps Detachments of the New York State National Guard in Buffalo, Rochester and Binghamton, N. Y.

Rockhill, E. P., capt., ordered to Denver for examination by an Army retiring board.

Wheate, J. M., M. R. C., relieved from duty at Ft. Yellowstone, Wyo., and ordered to Ft. Lincoln, N. D., for duty.

Stockard, J. K., M. R. C., granted leave of absence for one month, about December 5.

Hasseltine, H. E., M. R. C., left Ft. Thomas, Ky., on leave of absence for two months.

Sanford, J. L., M. R. C., granted leave of absence for one month.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Oct. 31, 1908.

Munger, C. B., asst.-surgeon, detached from the *Maine* and ordered to the Naval Hospital, Portsmouth, N. H.

McCormick, A. M. D., surgeon, detached from the Naval Recruiting Station, Baltimore, and ordered to the *Maine* as fleet surgeon of the Third Squadron, Atlantic Fleet.

Elliott, M. S., surgeon, detached from the *Maine* and ordered to the Naval Hospital, Washington, D. C.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 28, 1908.

Eager, J. M., asst.-surgeon-general, detailed to represent the service on the committee on revision of the Nomenclature of Diseases, American Public Health Association.

Kerr, J. W., asst.-surgeon-general, granted two days' extension of leave of absence from Oct. 23, 1908.

Irwin, Fairfax, surgeon, on being relieved by Surgeon R. M. Woodward, directed to proceed to Arundel Cove, Maryland, and report to commanding officer of the Revenue Cutter *Snohomish* for duty.

Carrington, P. M., surgeon, leave granted Oct. 6, 1908, for six days, amended to read four days en route to join station.

Williams, L. L., surgeon, directed to proceed to Boston and assume command of the service.

McIntosh, W. P., surgeon, on being relieved by Surgeon Charles E. Banks, directed to proceed to Baltimore, Md., and assume command of the service.

Woodward, R. M., surgeon, on being relieved by Surgeon L. L. Williams, directed to proceed to Detroit, Mich., and assume command of the service.

Wertenbaker, C. P., surgeon, detailed to represent the service at the meeting of the Virginia State Medical Society at Richmond, Oct. 22, 1908.

Lavinder, C. H., P. A. surgeon, directed to proceed to Columbia, S. C., on special temporary duty.

McMullen, John, P. A. surgeon, reassigned to duty at Immigration Station, Ellis Island, N. Y., to date from March 12, 1908.

Anderson, John F., P. A. surgeon, granted 17 days' leave of absence from Nov. 5, 1908.

Robinson, D. E., P. A. surgeon, granted one month's leave of absence from Nov. 5, 1908.

Creel, R. H., P. A. surgeon, directed to report for temporary duty in the Hygienic Laboratory, Nov. 1, 1908.

Smith, F. C., P. A. surgeon, directed to report for temporary duty in the Hygienic Laboratory, Nov. 1, 1908.

Sweet, E. A., P. A. surgeon, leave of absence for two months from Aug. 18, 1908, amended to read two months from Aug. 25, 1908. Granted one month's leave of absence from Oct. 25, 1908, on account of sickness.

Wood, Charles E., asst.-surgeon, on arrival of Assistant-Surgeon R. M. Grimm at Chicago, Ill., directed to proceed to Baltimore, Md., and report to the commanding officer of the Revenue Cutter *Seneca* for duty.

Preble, Paul, asst.-surgeon, directed to report to the Medical Officer in command at Marine-Hospital, Baltimore, for duty and assignment to quarters.

Grimm, R. M., asst.-surgeon, directed to proceed to Chicago, and report to Medical Officer in command of Marine-Hospital for duty and assignment to quarters.

Ridlon, Joseph R., ast.-surgeon, directed to report to the Medical Officer in command at Marine-Hospital, Stapleton, N. Y., for duty and assignment to quarters.

Bailey, C. W., acting asst.-surgeon, granted 14 days' leave of absence from Oct. 21, 1908.

Lyall, Robert, acting asst.-surgeon, granted five days' extension of leave of absence from Oct. 17, 1908, without pay.

Naulty, C. W., Jr., acting asst.-surgeon, granted three days' leave of absence from Oct. 19, 1908.

Onuf, B., acting asst.-surgeon, granted 27 days' leave of absence from Nov. 1, 1908.

APPOINTMENTS.

Dr. Paul Preble commissioned (recess) as assistant surgeon in the Public Health and Marine-Hospital Service, Oct. 20, 1908.

Dr. R. M. Grimm commissioned (recess) as assistant surgeon in the Public Health and Marine-Hospital Service, Oct. 20, 1908.

Dr. Joseph R. Ridlon commissioned (recess) as assistant surgeon in the Public Health and Marine-Hospital Service, Oct. 20, 1908.

BOARD CONVENED.

Board of medical officers convened to meet at the Marine-Hospital, San Francisco, Nov. 9, 1908, for the purpose of making a physical examination of a Captain and Lieutenant of Engineers of the Revenue Cutter Service. Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. W. King, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 26, 1908.

SMALLPOX—UNITED STATES.

California: Berkeley, Sept. 28-Oct. 3, 1 case; San Francisco, Oct. 3-10, 2 cases.
District of Columbia: Washington, Oct. 3-10, 1 case.
Florida: Jacksonville, Oct. 3-10, 1 case.
Illinois: Chicago, Oct. 10-17, 1 case.
Indiana: Indianapolis, Oct. 3-11, 5 cases.
Ohio: Cincinnati, Oct. 3-10, 1 case; Dayton, 1 case.
Texas: San Antonio, Oct. 3-10, 1 case.
Wisconsin: Milwaukee, Sept. 27-Oct. 3, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Sept. 5-12, 4 cases, 1 death.

SMALLPOX—FOREIGN.

Arabia: Aden, Sept. 14-28, 21 deaths.
Canada: Winnipeg, Oct. 3-10, 1 case.
Ecuador: Guayaquil, Sept. 14-26, 2 deaths.
Egypt: Cairo, Sept. 19-26, 1 case, 1 death.
Grenada, Island: Sept. 19-26, 3 deaths.
India: Bombay, Sept. 15-22, 2 deaths; Calcutta, Aug. 29-Sept. 5, 3 deaths.
Indo-China: Cholen, Aug. 29-Sept. 5, 1 case, 1 death.
Italy: General, Sept. 29-Oct. 4, 22 cases; Naples, Oct. 3-10, 4 cases.
Norway: Christiania, Sept. 19-26, 11 cases, 1 death.
Russia: Moscow, Sept. 12-19, 3 cases 13 deaths; Warsaw, Aug. 29-Sept. 19, 17 deaths.
Spain: Valencia, Sept. 19-Oct. 3, 4 cases, 1 death; Vogo, Sept. 26-Oct. 3, 1 death.
Straits Settlements: Singapore, Aug. 29-Sept. 5, 1 death.

YELLOW FEVER.

Barbados: Bridgetown, Oct. 10, 1 case, 1 death.
Mexico: Merida, Oct. 15, 1 case; Veracruz, Oct. 26, 1 case.
St. Vincent, Island: Oct. 4, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 29-Sept. 12, 56 cases, 49 deaths; Provinces, 2,442 cases, 1,582 deaths.

CHOLERA—FOREIGN.

China: Amoy, Sept. 5-19, 9 deaths.
India: Bombay, Sept. 5-22, 2 cases, 2 deaths; Calcutta, Aug. 29-Sept. 12, 13 deaths; Rangoon, Sept. 5-12, 1 death.
Japan: Moji, Sept. 2-15, 33 cases; Wakamatsu, Aug. 25-Sept. 15, 6 cases, 3 deaths.
Russia: General, to Oct. 1, 19,612 cases, 8,947 deaths.
Straits Settlements: Singapore, Aug. 29-Sept. 5, 5 deaths.

PLAGUE.

Chile: Iquique, Sept. 21, 4 cases.
Ecuador: Bahahoy, Oct. 4, 4 cases, 1 death.
Egypt: General, Sept. 25-Oct. 8, 14 cases, 10 deaths; Alexandria, 6 cases, 4 deaths; Port Said, 3 cases.
India: Bombay, Sept. 15-22, 26 deaths; Calcutta, Aug. 29-Sept. 12, 20 deaths; Rangoon, Sept. 5-12, 12 deaths.
Indo-China: Cholen, Aug. 29-Sept. 12, 7 cases, 6 deaths; Siagon, 1 case, 1 death.
Japan: Island of Awaji, to Sept. 26, 45 cases; Kobe, Sept. 12-19, 1 death; Nishinomiya, Sept. 26, present.
Peru: Galao, Sept. 12-26, 4 cases, 1 death.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

TEXAS State Board of Medical Examiners, Houston, November 10. Secretary, Dr. M. E. Daniel, Honey Grove.

CONNECTICUT Homeopathic Medical Board, New Haven, November 10. Secretary, Dr. Edwin C. M. Hall, 82 Grand avenue, New Haven.

CONNECTICUT Eclectic Medical Board, Hotel Garde, New Haven, November 10. Secretary, Dr. T. S. Dodge, Torrington.

CONNECTICUT State Medical Examining Board, City Hall, New Haven, November 10-11. Secretary, Dr. Charles A. Tuttle, 196 York street, New Haven.

MAINE Board of Registration of Medicine, Preble House, Portland, November 10-11. Secretary, Dr. William J. Maybury, Saco.

FLORIDA: Regular Board of Medical Examiners, Jacksonville, November 11-12. Dr. J. D. Fernandez, Jacksonville.

WEST VIRGINIA State Board of Health, Wheeling, November 10-12. Secretary, Dr. H. A. Barbee, Point Pleasant.

MISSOURI State Board of Health, Kansas City, November 23-25. Secretary, Dr. J. A. B. Adcock, Warrensburg.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 10-12. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

Teaching of the Fundamental Sciences.

In the *British Medical Journal*, October 3, Dr. Alexander MacAlister shows that, whereas formerly anatomy was the one dominant subject in medical education, now there are five sciences in which laboratory work has to be done. Of these he thinks that pathology and bacteriology should be studied in their entirety, as they bear on professional problems at every point. As for anatomy, physiology and chemistry, however, the domain of each of these sciences is too vast to be entirely covered by one student. In this day of specialization it is difficult enough to become conversant with the whole range of one subject, much more five. But, since for medical men, a knowledge of so many fundamental sciences is inexorably required, the teacher must select and lay stress on those parts of his subject which have a direct bearing on the physician's life-work.

The rapid advances in the fundamental sciences demand that they be taught by specialists who devote their lives to their respective subjects. The advantage of this is that he who knows best must speak with the greatest authority. There is a danger, however, that the facts of most interest to the specialist may be of the least value to the practitioner. The teacher, therefore, should studiously omit that which is chiefly or wholly of academic interest. In drawing up the teaching schedule, therefore, much wisdom is required. MacAlister shows that in the proper selection of the parts of the subject to be taught the teacher is seriously handicapped if he has not had personal experience of the needs of the student by having gone through the whole of the medical course, and adds: "I should not feel myself fit to teach anatomy if I had not behind me the experience of ten years, both in private practice and as one of the surgical staff of a hospital."

The last reference is of interest in this country, since there seems to be a tendency toward the formation of medical departments by smaller universities and colleges, in which the fundamental sciences are taught almost entirely by teachers who are not graduates in medicine.

A Correct Attitude Regarding Reciprocity.

The Ohio Board of Medical Examiners states that some medical students, having preliminary education less than that required by the Ohio law, have been induced to attend medical courses in other states, hoping after graduation to obtain a license in Ohio through reciprocity. The board announces that such applicants will not be eligible to registration in Ohio, since, under the provision for reciprocity, the license of another state is accepted only in lieu of the written examination. In all other respects the applicant must satisfy the requirements of the Ohio law. That is certainly a proper ruling. Reciprocity is a measure which should be more generally adopted, but it must not be made a means of evading or lowering medical standards.

Maryland June Report.

Dr. J. M. Scott, secretary of the Maryland Board of Medical Examiners, reports the written examination held at Baltimore, June 16-19, 1908. The number of subjects examined in was 9; percentage required to pass, 75. Of the 137 applicants who were examined, 112 participated in the examination for the first time, and of these 86 were successful. Twenty-five applied for re-examination in branches in which they had previously failed; of these, 7 were successful, working off all branches. Primary examinations require a general average of 75 per cent. Those re-examined are required to make 75 per cent. in each branch. Thirteen reciprocal licenses were granted at this meeting, and six candidates were licensed by special examination and under exemption clauses. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
George Washington University	(1907) 80; (1908)) 75, 86, 87, 88	
Georgetown University	(1906)	79
Howard University	(1907)	85
University of Maryland	(1905)*, (2, 1906), (3, 1907)* (1907) 85; (1908) 75, 75, 75, 75, 75, 75, 76, 76, 76, 77, 77, 79, 82, 82, 83, 84, 86, 88, 89, 90.	
Johns Hopkins Med. School	(1907) 86; (1908) 75, 77, 77, 79, 80, 80, 81, 81, 84, 85, 85, 85, 90, 91.	
Baltimore Med. Coll.	(1908) 75, 75, 78, 80, 81, 82, 83, 83, 83, 84, 84, 85, 88, 89.	
College of P. and S., Baltimore	(1906)*, (1908) 78, 80, 81, 81, 85, 88.	
Woman's Med. Coll., Baltimore	(1908) 76, 79, 81	
Maryland Med. Coll	(1908)	78
Leonard School of Med	(1908)	80
University of Pennsylvania	(1897) 92; (1907) 80; (1908) 75, 80, 83, 86, 86, 88, 91.	
Woman's Med. Coll. of Pennsylvania	(1908) 75, 80, 80, 83, 85	
Jefferson Med. Coll.	(1908) 78, 81, 82	
Vanderbilt University	(1907)	78

FAILED.

College.		
George Washington University	(1907)* (1907)	68
Howard University	(1907)*	
Maryland Med. Coll.	(1904)* (1905)* (2, 1906)* (2, 1907)* (1908) 57, 71.	
Baltimore Med. Coll.	(1905)* (1905) 70; (2, 1906)* (1907)* (1908), 62, 68, 68, 70, 71, 72, 73.	
College of P. and S., Baltimore	(1907)* (1907) 64, 72; (1908) 66, 73.	
Woman's Med. Coll., Baltimore	(1908) 68, 69, 70	
University of Maryland	(1904)* (2, 1907)* (1908) 60, 68, 70, 71, 71, 73.	
Baltimore University	(1907)* (1907)	71
Jefferson Med. Coll.	(1907)* (1908)	70

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with
Howard University	(1895)	Dist. Colum.
Columbian University, Washington	(1904)	Dist. Colum.
Kentucky University	(1904)	Indiana
Johns Hopkins Med. School	(1902)	Michigan
Baltimore University	(1898)	New Hamp.
College of P. and S., Baltimore	(1903)	W. Virginia
University of Maryland	(1904)	Virginia
University of Michigan	(1894)	Illinois
Long Island Coll. Hospital	(1893)	Dist. Colum.
Jefferson Med. Coll	(1890)	Maine
University Coll. of Med., Richmond	(1907)	Virginia
Wisconsin Coll. of P. and S	(1903)	Wisconsin
University of Naples, Italy	(1899)	Maine

LICENSED BY SPECIAL EXAMINATION AND UNDER EXEMPTION CLAUSES.

College.	Year of Grad.		
College of P. and S., Baltimore	(1884)	(1886)	(1894)
Baltimore Med. Coll	(1891)		
Harvard Med. School	(1901)		
University of Pennsylvania	(1894)		

* Re-examined, no percentage assigned.

Rhode Island July Report.

Dr. George T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 2-3, 1908. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 16, of whom 10 passed and 6 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Georgetown University	(1908)	80.1
Baltimore University	(1904)	80
Boston University	(1908)	84.2
Harvard Med. School	(1890)	80
Tufts Coll. Med. School	(1907)	82.6
Miami Med. Coll	(1905)	80
University of Pennsylvania	(1908)	83.8
Medico-Chirurgical Coll., Philadelphia	(1903)	80.1
University Coll. of Med., Richmond	(1908)	87.1
Non-graduate		80

FAILED.

Baltimore Med. Coll.	(1907)	72.1, 73.5
Baltimore University	(1906)	68.1
Laval University, Quebec	(1908)	75.4
University of Naples, Italy	(1903)	70.1
Non-graduate	(....)	60.*

* Examination incomplete.

Marriages

RALPH L. LARSEN, M.D., to Mrs. Mae Lee, both of Chicago, recently.

J. D. WHITHALL, M.D., Philadelphia, to Miss Ogden of Media, Pa., October 12.

FRANK J. DEVLIN, M.D., to Miss Adele Devine, both of Newark, October 21.

GEORGE W. MAHONEY, M.D., to Miss Julia Garvy, both of Chicago, October 21.

JOHN J. COADY, M.D., to Miss Mildred Brinkerhoff, both of Mokena, Ill., October 21.

FRANK EDGAR DOLSON, M.D., to Miss Mabel Vogen, both of Philadelphia, October 21.

GEORGE A. SONNEBORN, M.D., to Miss Lilian Hess, both of Philadelphia, October 21.

PAUL OLIVER, M.D., Chicago, to Miss Elizabeth Lane of Rockford, Ill., October 28.

F. T. CASSIDY, M.D., to Miss Gabriella Griffin, both of Fredericksburg, Va., October 22.

LILLIAN J. PEARCY, M.D., and Col. J. H. Brewer, both of Louisville, Ky., October 17.

ERNEST SCOTT, M.D., to Miss Mabel Huddleson, both of Columbus, Ohio, October 14.

ALBERT H. CARTER, M.D., to Miss Elizabeth Malcolm Stewart, both of Chicago, October 29.

C. LEWIS SIEGLER, M.D., to Miss Mary R. Rufe, both of Doylestown, Pa., October 14.

WILLIAM ELYET BYERS, M.D., to Miss Amy Horton Rogers, both of Baltimore, October 14.

DANIEL CROSBY, M.D., to Miss Agnes Foster, Buchanan, both of Fruitvale, Cal., October 14.

MICHAEL W. MURRAY, M.D., to Miss Celia Bucheit, both of New Decatur, Ala., October 27.

GEORGE ENSMINGER, M.D., Chicago, to Miss Elizabeth Lockwood of Peru, Ind., October 8.

WILLIAM C. ZANTING, M.D., to Miss Iva Mae Kauffman, both of Cleveland, October 15.

CHARLES EVERETT FARR, M.D., to Miss Helen Woodhull, both of New York City, October 22.

ALFRED M. HELLMAN, M.D., to Miss Clarisse N. Bloom, both of New York City, October 12.

MARK E. FLEMING, M.D., to Miss Sarah Louise Elstein, both of New York City, October 15.

THOMAS MCCRAE, M.D., Baltimore, to Miss Marian Gwyn of Dundas, Ont., September 16.

JESSE S. BEAN, M.D., Olaton, Ky., to Miss Birdie Harrison of Leitchfield, Ky., October 21.

JOHN H. OVERBAUGH, M.D., Hartland, Wis., to Miss Gertrude Smith at Tomah, Wis., October 17.

EZRA OFFUTT WITHERSPOON, M.D., to Miss Nell Elliott Newman, both of Louisville, October 14.

HARRY W. BAUER, M.D., Ketchilso, Alaska, to Miss Emma Farrar of Seattle, Wash., September 2.

MARSHALL B. FLOWERS, M.D., Albany, Ky., to Miss Mabel Willingham of Highway, Ky., recently.

FRANK GEORGE SCAMMELL, M.D., Trenton, N. J., to Miss Anna Reamer of Easton, Pa., October 28.

LEACH K. CRACRAFT, M.D., Elm Grove, W. Va., to Miss Geneva McLure of Wheeling, October 24.

EUGENE YOUNG WILLIS, M.D., Montgomery, W. Va., to Miss Mary Clodius Harris of Lignum, Va., recently.

HURDLE THOMAS MCCLAIN, M.D., to Miss Sarepta Byrde Livingston, both of Mooresburg, Tenn., October 14.

WALTER H. BAKER, M.D., South Bend, Ind., to Miss Ethel Carver of Indianapolis, at Hannibal, Mo., October 20.

CHARLES RICHARDSON, M.D., Belair, Md., to Miss Cornelia Trimble Munnikhuysen, at Emmertin, Md., October 10.

NOBLE SPROAT HEANEY, M.D., Omaha, to Miss Floy Eleanor Chamberlin of Chicago, at London, England, October 15.

MICHAEL J. NESTOR, M.D., Providence, to Miss Marie Antoinette Agnew of Relay, Md., at Elkridge, Md., October 21.

ADRIAN C. COOGLER, M.D., Green Cove Springs, Fla., to Miss Catherine Dennis of Suffolk, Va., at Richmond, October 3.

THOMAS HENRY WILKINS, M.D., Portsmouth, Va., to Miss Josephine Rebecca Wicks of Chestertown, Md., November 5.

ELLSWORTH J. SMITH, M.D., Larchmont, N. Y., to Miss Mabel Eleanor Greenwood of St. Catherines, Ont., September 15.

FREDERICK O. BALCOM, M.D., Providence, to Miss Marie Eugenie Dursch, of Newburg, N. Y., at Central Falls, R. I., October 5.

ROBERT COLLYER BOURLAND, M.D., Rockford, Ill., to Miss Elizabeth Mary Stimson of Appleton, Wis., at Peoria, Ill., October 10.

Deaths

David Joseph Doherty, M.D., died October 27, in the Hospital of St. Bernard de Dieu, Chicago, after a second attack of cerebral hemorrhage, aged 58. Dr. Doherty was born in St. Louis; graduated from the Minnesota Hospital Medical College in 1887, and from the University of Freiburg, Germany, a year later. He was a member of the American Medical Association; Chicago Medical Society, of which he served as necrologist and treasurer for several years; American Oriental Society; American Anthropological Association; and Modern Language Association. He was associate professor of gynecology in the Chicago Polyclinic. During the Spanish-American War, Dr. Doherty became interested in the people and language of the Philippine Islands, and, after having mastered the Tagalog, the most important dialect, he made his first journey to the Islands in 1903 to study the people, the languages and the conditions obtaining there. His report of this trip was so valuable that it was made a part of the record of the United States Senate. His next study was a comparison of the different dialects, and resulted in the preparation of an English-Tagalog grammar and English-Tagalog vocabulary. He made a second trip to the Islands in 1906, and a third voyage a year ago. His principal achievements, aside from his ethnologic and philologic researches, were the foundation of a training school for native nurses, and of a society to provide for a dispensary connected with an organization to procure pure milk for infants. Dr. Doherty had the entire confidence of the Filipinos, associated with both their radical and conservative leaders, and held at the same time most cordial relations with the United States Government officials. He was beloved and respected by all with whom he came in contact, because of his kindheartedness, truthfulness and sincerity. His career may serve as an example of altruism, kindliness, devotion to principle and self-denial for the welfare of others.

John Henry Jackson, M.D. Medical School of Maine, Brunswick, 1868; a member of the American Medical Association and American Academy of Medicine; for thirty-five years a practitioner of Fall River, Mass.; and for twelve years or more professor of theory and practice of medicine in the College of Physicians and Surgeons, Boston; died at his home October 27, aged 70.

Charles Erastus Hickey, M.D. McGill University, Montreal, 1866; M. C. P. and S., Ontario, 1867; formerly a practitioner of Morrisburg, Ont., and for a time Member of Parliament from that constituency; for the last three years superintendent of the Government Institution for the Feeble-Minded, Coburg; died suddenly in that place, October 18, aged 69.

William Hollington, M.D. University of Michigan, Ann Arbor, 1852; surgeon of the Twenty-fifth Illinois Volunteer Infantry during the Civil War; later a practitioner of Cameron, Mo.; and for more than twenty years a resident of San Diego, Cal.; died at his home in that city, March 7, from disease of the stomach, aged 77.

Henry Oliver Stacy, M.D. University of Louisville, 1889; a member of the State Medical Association of Texas; local surgeon at Waxahatchie, Texas, of the F. W. & N. O. and C. T. & N.-W. railways, died at his home October 24, from cerebral hemorrhage, aged 45.

Millard M. Smith, M.D. Cincinnati College of Medicine and Surgery, 1871; a member of the Tennessee State Medical Asso-

ciation and Tri-State Medical Society of Mississippi, Arkansas and Tennessee; died at his home in Whiteville, Tenn., October 4, aged 57.

Jabiel S. Riley, M.D. University of California, 1883; a member of the Medical Society of the State of California; for twenty years local surgeon for the Southern Pacific system at Crockett and Port Costa; died at his home in Port Costa, October 9.

Addison W. Scott, M.D. University of Buffalo, N. Y., 1890; of Syracuse, N. Y.; a member of the American Medical Association; died at the home of his daughter in Germantown, Philadelphia, October 24, from cancer of the stomach and liver, aged 57.

C. L. Hamby, a member of the Medical Society of the State of North Carolina; a resident of Dehart, N. C.; a member of the Wilkes County board of pension examining surgeons; was found dead in his buggy in North Wilkesboro, N. C., October 21.

Charles William Woolridge, M.D. University of Michigan, Ann Arbor, 1877; formerly a practitioner of northern Michigan, but later physician to the Yellow Jacket Mine, near Helena, Mont.; died in that place, October 16, aged 61.

Charles L. Hane, M.D. Starling Medical College, Columbus, 1897; died at his home in Florida, Ohio, October 25, from tetanus following injuries to the face received by being thrown from his buggy eight days before, aged 39.

Edwin S. Hutchins, M.D. Hahnemann Medical College, Chicago, 1900; a member of the Washington State Medical Association; died suddenly in his office at Spokane, October 29, from cerebral hemorrhage, aged 35.

Joseph Henry Soper, M.D. College of Physicians and Surgeons, Chicago, 1883; a member of the Medical Society of the State of California; a veteran of the Civil War; died at his home in Seattle, October 2, aged 64.

Engelbert Voerster, Sr., M.D. Washington University, St. Louis, 1865; a veteran of the Civil War; coroner of St. Louis County from 1870 to 1878; died at his home in St. Louis, from heart disease, October 26, aged 66.

James Madison McLaughlin (license, Ala., 1880); a Confederate veteran; for more than forty years a practitioner of St. Clair County, Ala.; died at his home in Springville, October 23, from paralysis, aged 72.

Alfred Espy McKeehan, M.D. Bellevue Medical College, New York City, 186—; of Minneapolis; for four years a resident of Mexico City; died at his home in Minneapolis, October 2, from cerebral hemorrhage, aged 66.

Frank Burwell Hill, M.D. Atlanta (Ga.) School of Medicine, 1908; of Chipley, Ga.; died at the home of his father in Greenville, Ga., from typhoid fever, October 12, after an illness of twelve weeks, aged 25.

Ezra M. Sellers, M.D. College of Physicians and Surgeons, Baltimore, 1893; died October 22, at his home in St. Marys, W. Va., from injuries received in an automobile accident a few days before, aged 42.

William Stephen, M.D. Trinity Medical College, Toronto, 1894; M.C.P. & S., Ontario, 1894; one of the founders of the Antituberculosis Society; died at his home in Vancouver, B. C., October 20.

Otto W. Fennel, M.D. Medical College of Ohio, Cincinnati, 1884; a member of the Academy of Medicine, Cincinnati; died at his home in Clifton, Cincinnati, October 23, from nephritis, aged 47.

William E. Vary (examination, Ill.); examining surgeon during the Civil War; for twenty-five years a practitioner of De Witt, Iowa; died at his home in Chicago, October 28, aged 82.

Nathan C. Gunder, M.D. Cincinnati College of Medicine and Surgery, 1860; one of the oldest practitioners of Columbus, Ohio; died at his home, October 22, from arteriosclerosis, aged 76.

Jesse K. Dubois, M.D. Washington University, St. Louis, 1875; formerly of Chicago; a member of the American Medical Association; died suddenly October 26, in Boise City, Idaho.

George Warren Reynolds, M.D. Rush Medical College, Chicago, 1873; a member of the Illinois State Medical Society; died at his home in Chicago October 4, from tuberculosis.

Thomas J. Richards, M.D. Jefferson Medical College, Philadelphia, 1868; a veteran of the Civil War; died at his home in Clear Springs, Ind., October 17, from paralysis, aged 86.

Guy Morrison, M.D. St. Louis Medical College, 1879; of Pinckneyville, Ill.; a member of the Illinois State Medical Society; died in El Paso, Texas, March 2, aged 54.

George Wilford Schade, M.D. Missouri Medical College, St. Louis, 1877; formerly an interne in the St. Louis City Hospital; died in St. Louis, February 10, aged 53.

William W. Bickett, M.D. Starling Medical College, Columbus, 1864; of Columbus, Ohio; died at the home of his sister in Danville, Ill., from heart disease, October 22.

Charles Robert Bradfield, M.D. Detroit Medical College, 1871; died at his home in Mount Vernon, Ohio, recently, and was buried at Danville, Ohio, October 16, aged 62.

George W. Hanes, M.D. Rush Medical College, Chicago, 1876; died suddenly in his office in Maynard, Iowa, October 14, from pulmonary hemorrhage, aged 57.

Louis Everett Foster, M.D. Boston University School of Medicine, 1899; died at his home in Northboro, Mass., October 16, from nephritis, aged 33.

A. H. Mathews, M.D. University of Georgia, Augusta, 1869; Statesboro, Ga.; died at Wadley, Ga., October 21, from cerebral hemorrhage, aged 65.

Abiel S. Austin, M.D. Western Reserve University, Cleveland, 1865; of Fowlerville, Mich.; died in a sanatorium at Flint, Mich., October 19.

William Sparrell McCall, M.D. Missouri Medical College, St. Louis, 1857; died at his home in Fulton, Mo., October 15, from cardiac dropsy, aged 74.

Samuel J. Britton, M.D. Western Reserve University, Cleveland, 1875; died suddenly at his home in New Castle, Pa., October 22, aged 58.

William Cameron, a practitioner of Indiana for thirty years; died at his home in Rome City, May 12, from cardiac dilatation, aged 59.

John K. Richey, M.D. American Medical College (Eclectic), St. Louis, 1880; of Mendota, Ill.; died in Peru, Ill., August 14, aged 70.

John B. Shore, M.D. Barnes Medical College, St Louis, 1895; Salem, Ill.; not in practice, died October 5, from typhoid fever, aged 41.

John P. Hopkins, M.D. Bennett Medical College, Chicago, 1893; of Oaklawn, Ill.; died at Orland, Ill., April 12, aged 46.

John P. Hutchison (years of practice, Ill., 1887); died at his home in Roodhouse, Ill., April 18, aged 80.

Charles E. Allen, M.D. Rush Medical College, 1862; died at his home in Mason, Ill., June 10, aged 74.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Wise Action in Idaho.

At the recent meeting of the Idaho State Medical Association, the council recommended that no special effort be made at the coming session of the legislature to amend the medical law, but that the association, through its legislative committee and otherwise, cooperate with the State Board of Medical Examiners, in an effort to educate both the medical profession and the people of the state as to the need, in Idaho, of further and better medical legislation, in order that an united and harmonious effort might be made before the legislature of 1911 to secure such legislation as seemed desirable. This recommendation was adopted by the association.

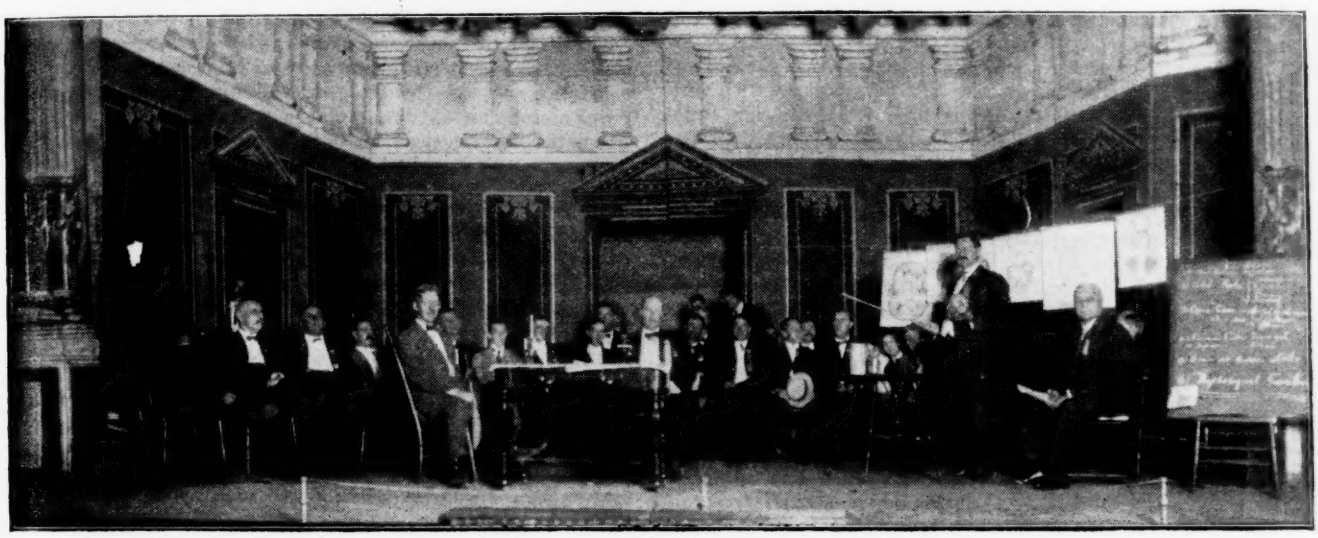
The wisdom of such action is obvious. Many of our efforts to secure desired legislation have failed or have aroused violent and unnecessary opposition because a systematic and general education of the profession and the public did not precede such campaigns. Far too much time and labor has been spent in endeavoring to force state legislatures to enact certain laws either by the use of political methods or by bringing personal influence to bear on the members of the legislature. Laws so enacted have in many cases been utterly useless, as they could not be enforced, owing to opposition on

the part of the public. Had both the public and the members of the legislature been shown beforehand the object of such laws and the great importance of their enactment and enforcement to the people of the state, the medical profession would have had not the opposition of the public, but its support.

The action of the Idaho association is most commendable. We venture the assertion that after two years of professional and public education better and more effective laws will be possible in Idaho than could have been obtained through hasty action unaccompanied by proper enlightenment of the people.

Dr. Jones' Work in California.

Dr. Philip Mills Jones, secretary of the Medical Society of the State of California, has been giving lectures through the state, speaking not only to physicians but also to teachers, public officials, professional men and to others interested in public health problems. He has recently spoken at Riverside, Fresno, Eureka, and other points in the state, calling attention to the insanitary conditions that are responsible for an unnecessarily large death rate. The newspapers give Dr. Jones flattering notices. According to Dr. Jones California is willing to spend $40,000 a year in investigating a scale or bug-pest which is destructive of vegetable life, but is not spending a dollar in investigating the cause or the method of prevention of diseases in man. Pure milk, examination of school children, prevention of tuberculosis and typhoid, suppression of quacks and nostrums were also discussed. This work is of the utmost importance and California is most fortunate in having such a man as Dr. Jones to take it up. Newspaper reports show that the public in California as elsewhere is interested in improving sanitary conditions and only needs to be shown the way and properly led to take up an active fight against disease.



The above is a photograph of a demonstration of postgraduate work given by the Clark County Medical Society before the Kentucky State Medical Association at its recent meeting. The Clark County Society is one of average size, and the postgraduate work was carried on with the aid of simple appliances, such as blackboards, home-made charts, skulls and a few prepared specimens. The demonstration proved the practicability of the postgraduate study plan, as well as its adaptability to any county society.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month.

FOURTH WEEKLY MEETING.

5. DISEASES CAUSED BY NEMATODES (*Continued*).

D. ANKYLOSTOMIASIS.

Uncinariasis (hookworm disease; miner's anemia), Incidence, distribution in United States.

Parasite.—(a) Old-world *Ankylostoma duodenale*, (b) new-world *Uncinaria Americana*. Size and shape of male and female. Mouth, teeth and esophagus. Eggs, size, in segmentation. Entrance of embryos into body. Life of worm in intestine.

Symptoms.—Gastrointestinal symptoms, anemia, lack of expression, "Florida complexion," enlarged liver and spleen, potbelly, edema of feet, cardiovascular symptoms. Blood examination. Ova in stools.

E. FILARIASIS.

Filaria bancrofti, F. diurna F. perstans.—Filaria bancrofti, size, shape, ova, intermediate host. Distribution in the United States. Microscopic diagnosis, presence at night, also found in lymph channels. Symptoms due to blocking of lymph channels: hematochyluria, lymph-scrotum.

F. DRACONTIASIS: GUINEA-WORM DISEASE.

Dracunculus medinensis.—Distribution in United States, shape, size, entrance to body, development, localization.

G. OTHER NEMATODES.

Filaria.—F. labialis, F. hominis oris and *F. bronchialis. Trichocephalus dispar;* whip worm, distribution, description. *Strongyloides intestinalis.*

6. PARASITIC ARACHNIDA AND TICKS.

A. PENTASTOMES: *Lingatula rhinaria*, and *Porocephalus constrictus.*
B. DEMODEX FOLLICULORUM.
C. SARCOPTES SCABIEI (Itch insect).—Diagnosis and treatment.
D. LEPTUS AUTUMNALIS (Harvest bug).
E. IXODIASIS (Tick fever).

7. PARASITIC INSECTS.

A. PEDICULI. (1) *Pediculus capitis*, (2) *P. corporis*, (3) *P. pubis.*
B. CIMEX LECTULARIUS.
C. PULEX IRRITANS.

8. PARASITIC FLIES.

MYIASIS: Gastrointestinal, cutaneous, nasal, etc.

MONTHLY MEETING.

The Diagnosis and Treatment of Ankylostomiasis.
Microscopic Diagnosis of the Different Malarial Fevers.
The Diseases Due to Parasites Entering the Body Through the Digestive Tract.

Society Proceedings

COMING MEETINGS.

Nevada State Medical Association, Goldfield, Nov. 10-11.
Southern Medical Association, Atlanta, Ga., Nov. 10-12.
Ohio Valley Medical Association, French Lick, Ind., Nov. 11-12.

MEDICAL SOCIETY OF VIRGINIA.

Thirty-ninth Annual Meeting, held in Richmond, Oct. 20-23.

The president, DR. WM. F. DREWRY, Petersburg, in the Chair.

Rev. James W. Morris, D.D., Richmond, offered prayer. Hon. D. C. Richardson, Mayor of Richmond, delivered an address of welcome, which was responded to by L. G. Pedigo, Roanoke.

Over five hundred members were in attendance, and one hundred and eighteen new members were elected. The society has grown to such an extent and the attendance has so increased that it was determined never to meet, hereafter, in a city of less than 25,000 population.

Officers Elected.

The following officers were elected: President, Dr. Stuart McGuire, Richmond; vice-presidents, Drs. O. C. Wright, Jarratt; E. T. Brady, Abingdon; Reid White, Lexington; secretary, Dr. Landon B. Edwards, Richmond; treasurer, Dr. R. M. Slaughter, Theological Seminary. Council: First District, Dr. C. P. Jones, Newport News; Second District, Dr. E. E. Field, Norfolk; Third District, Dr. A. L. Gray, Richmond; Fourth District, Dr. S. A. Hinton, Petersburg; Fifth District, Dr. J. M. Shackleford, Martinsville; Sixth District, Dr. G. J. Tompkins, Lynchburg; Seventh District, Dr. W. P. McGuire, Winchester; Eighth District, Dr. T. P. Quick, Falls Church; Ninth District, Dr. J. T. Graham, Wytheville; Tenth District, Dr. M. J. Payne, Staunton; at large, Dr. P. A. Irving, Richmond; Dr. M. M. Pearson, Bristol; Dr. J. R. Gildersleeve, Tazewell; Dr. Kirkland Ruffin, Norfolk; Dr. Stephen Harnsberger, Catlett. Delegates, A. M. A.: Dr. J. S. Horsley, Richmond; Dr. J. L. Kent, Lynchburg; Dr. W. A. Anderson, Farmville.

Roanoke was selected for the next meeting place.

Symposium on Anesthetics.

DR. H. D. HOWE, Hampton: The use of cold for local anesthesia is to be decried. For the infiltration method, 0.1 per cent. cocain in normal salt solution with adrenalin is probably the best local anesthetic, and it should be given intracutaneously, not subcutaneously. For operation on deeper parts, as in hernia, the best method is nerve-blocking. The field of local anesthesia is unlimited for operation on any part near the skin. I believe that in praising the local method of anesthesia, we minimize the pain and shock produced, and exaggerate the same as produced in general anesthesia. In using local anesthesia in an inflamed area there is increased pain after recovery from the anesthetic unless the blocking method is employed. To obviate this give morphin or morphin and scopolamin. In large operations the local anesthesia may be preceded by a few whiffs of chloroform or ether.

DR. STEPHEN HARNSBERGER, Catlett: The danger of chloroform lies in the method of the anesthetist, the physiology and pathology of the patient and on the atmosphere of the room.

DR. J. T. GWATHMEY, New York: I prepare my solution as follows: Five grains of cocain are placed in a cold watch crystal, and thirty minims of ether are added to dissolve it. After evaporation of the ether, one-half ounce of cold, sterilized water is added to the residue making a 2 per cent. solution. For spinal analgesia, no fatalities have followed its use. No one is justified in giving a pulmonary anesthetic if spinal anesthesia will answer the purpose. Where pulmonary anesthetics are contraindicated or the anesthetist is in the way, a new method is to begin with gas and follow with ether; then transfer to the rectum, gauging the correct temperature and pressure. It takes twice as long to kill an animal with warm as with cold chloroform. For this reason it is safer to give chloroform in the South than in the North, and this is why it acts better in warm weather. No one anesthetic or sequence is to be recommended exclusively. Morphin is always to be used as a preliminary; if contraindicated, give an enema of whiskey and saline solution.

DR. LOMAX GWATHMEY, Norfolk: No operation is to be called painless unless the patient says it is painless.

The Minin Light.

DR. MARK W. PEYSER, Richmond: That this light emits blue-violet rays is proved by the fluorescence of kerosene oil and quinin solutions when subjected to it. The violet rays are anesthetic; hasten absorption of infiltrations; produce regeneration of the skin with formation of but little scar tissue, and are astringent. They are indicated in all conditions of pain, except some neuralgias, lupus, chronic skin diseases, including tuberculides and syphilides, ulcers, lacerations and effusions. They may temporarily increase pain. They are contraindicated in the acute cutaneous eruptions, hysteria, sometimes provoking that state in the case of young anemic girls, and in the aged with arthritis of the extremities.

Physiologic Action of Electric Currents—A Brief for Their Intelligent Uses in Therapeutics.

DR. W. H. WALLACE, Brooklyn: Currents of high voltage and high frequencies work by breaking up the air and evolving nascent oxygen which is taken up by the blood and circulates as oxyhemoglobin, and as suboxidation is at the bottom of the majority of pathologic conditions most amenable to electrical treatment, we understand the action of these currents. Galvanism manifests itself in polar action. Oxygen is set free from the positive pole and forced into the tissues, doing locally what the static current does systematically. From the negative pole nitrogen is set free. It is, therefore, destructive and useful when there is something to be destroyed.

DISCUSSION.

DR. MARK W. PEYSER, Richmond: The evolution of nascent oxygen by static machines has led to the hope that persons with tuberculosis could be cured by breathing the atmosphere created. As most of these suffer from anemia, the hope proves false, there being an insufficiency of the necessary hemoglobin to enter into a combination that might prove curative. Probably, the negative galvanic pole, in its role as a producer of hyperemia, acts like the mechanical methods of Bier.

Value of X-Rays in Chest Diagnosis.

DR. A. L. GRAY, Richmond: The *x*-rays are valuable in the diagnosis of aneurysm, pleuritic effusions, pyothorax, hydrothorax and empyema, the pus in this affection producing a denser shadow than that of hydrothorax. Pneumothorax is characterized by the absence of the normal shadow. An unqualified diagnosis may be made in many cases of tuberculosis before the tubercle bacillus has appeared in the sputum, and before physical signs are demonstrable. The progress of the disease may be studied by successive radiographs. Both back and front exposures should be made in chest cases.

DISCUSSION.

DR. J. G. NELSON, Richmond: Physical examination has some points superior to those of the *x*-rays, and vice versa. Without other signs, the plate conveys no information. There are but few conditions in the thorax that will not be apparent to the physician who cultivates his senses. In heart lesions the *x*-rays are comparatively useless. Scattered tubercles can be diagnosed better by the rays, but these are usually accompanied by other signs.

DR. DOUGLAS VANDER HOOF, Richmond: The *x*-rays are of value only in doubtful chest cases, and also to confirm the physical findings. The chief condition in which we would like help from the rays is in the case of small encapsulated foci of pus.

DR. A. L. GRAY, Richmond: I do not intend to advocate that the *x*-rays supplant physical examination, but to discover conditions which are difficult or impossible for the physical diagnostician to ascertain. It is my desire that the two work hand in hand, one aiding the other.

Morbid Psychology.

DR. FREDERICK PETERSON, New York: Every physician is a psychotherapist in direct ratio to his quality. "Insanity is a long dream, and a dream, brief insanity." In a way, we may look on insanity, in itself a pathologic condition, a summation of periodically recurring dreams, as a kind of reduction of consciousness such as exists in a dream state. Sometimes we meet with nocturnal insanity in patients recovering from insanity, and who are well by day. The question of heredity in mental and nervous diseases is fortunately growing in public interest.

We must not lose sight of the fact that with every birth normal heredity presses down upon the newcomer with the force of a hundred million years to make and keep him an average, normal creature. Insanity is preventable by educating the public to the dangers of alcohol and syphilis, and by proper training of children. The cardinal principles of treatment are isolation and psychotherapy. Pending commitment, patients should not be detained in jails, but in psychopathic hospitals for at least ten days for observation, and should fall altogether under the rules of quarantine.

The Medical Side of the Alcoholic Problem.

DR. T. D. CROTHERS, Hartford, Conn.: The influence of alcohol in disease is of greater magnitude than syphilis, tuberculosis or any other germ disease known. Alcoholism is contagious, infectious and curable in the same sense as other disease, and it is always a medical problem and not a moral one. The present agitation by laymen, reformers and quacks is a startling reflection upon the stupidity of physicians, who, of all others, should teach the public and point out the means of cure and prevention. Medical men must make this a special study and bring it into the realm of actual practice.

DISCUSSION.

DR. J. N. UPSHUR, Richmond: Inebriates should be examined for commission to an asylum as are the insane; but legislators are too timid to pass the necessary laws.

Some Insect-Borne Diseases.

DR. GEORGE L. COLLINS, Fortress Monroe: That flies, polluted by contact with infected excrement, infect food and spread cholera and typhoid is commonly accepted. That such flies so spread the septicemic form of plague is also believed, although plague is more commonly contracted as the bubonic form from the bite of a flea of an infected rat. Relapsing fever, tuberculosis, tetanus, conjunctival disease and certain exanthemata are also believed to be spread sometimes by insects. Malaria, filiriasis, sleeping sickness, and possibly dengue, may be regarded as diseases proved to be caused by animal organisms and transmitted through the agency of insects.

Cleanliness, mosquito-netting and insecticides are to be used as preventives of diseases spread by insects. The best general insecticide is sulphur dioxid.

Is Mercury a Specific in Infectious and Contagious Diseases as Well as in Syphilis?

DR. H. E. JONES, Roanoke: Bichlorid of mercury is not only a specific for syphilis, but for every other disease caused by a living organism. My experience is that no patient under its treatment has ever contracted any other infection; and in no case of infection in which I have used it has there been a death, and I have seen but one complication. It has been discovered that in syphilis complicated with tuberculosis the use of mercury has been of much benefit for the latter as well as the former. Hypodermic exhibition is the best method of administration.

DISCUSSION.

DR. L. G. PEDIGO, Roanoke: As to the action of heroic doses of calomel, I believe there is an element of truth in the explanation that it is antiseptic. But this does not wholly explain the effect in dysentery, membranous croup, etc. I have used for several years successfully the method when instituted within 24 hours after the initial chill, in croupous pneumonia. Lentz used it as far back as 1870.

DR. H. E. JONES, Roanoke: By using mercury in typhoid fever, temperature is normal by the morning of the seventh day, rising to 100 F. in the evening. By the eleventh day it is normal both morning and evening. Two patients with pneumonia of nine and twelve weeks standing, respectively, are now much improved.

The Existing Relations Between the General Practitioner and the Specialist.

DR. J. W. BOVEE, Washington: Two special evils result from the attempts of general physicians to be specialists: 1. Delay until malignant disease is converted from curable to incurable. 2. Attempt to be surgeons. Surgical eporations must be done by those who operate continually, and not infrequently. Evils that exist among specialists are: 1. Reference of patients to physicians or specialists other than those who referred the case originally. 2. Attempt of specialists to do general work.

(To be continued.)

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Held at Washington, D. C., Sept. 28 to Oct. 3, 1908.

(Continued from page 1541.)

SECTION III.—SURGERY AND ORTHOPEDICS.

Treatment of Hip-Joint Disease.

This paper by PROF. CALOT, of Berck-sur-Mer, France, was read by the Secretary of the Section, Dr. John T. Bottomley, Boston.

To prevent erosion and destruction of the bone surfaces a mixture is injected early, consisting of creosote 3 parts, iodoform 7 parts, ether 25 parts and olive oil 50 parts. A horizontal line should be drawn passing by the spines of the pubes, and the femoral artery should be located. Then a long needle, of the lumbar puncture type, should be inserted at a point 2 centimeters outside the artery and 3 centimeters below the horizontal line. At 4 or 5 centimeters deep the point of the needle comes in contact with the anterior surface of the neck of the femur. The thigh should be put in slight flexion, abduction and outward rotation. The injections should be repeated every three or five days, should be nine or ten in number, and cover a period of some two months. Four to 10 centimeters of the liquid should be injected, according to age. All this time the patient must be in bed, either with extension or in a bivalve plaster cast.

Treatment of Tuberculous Hip Disease by Weight-Bearing and Fixation by the Lorenz Short Hip Spica.

DR. H. AUGUSTUS WILSON, Philadelphia: Weight-bearing is conducive to the benefits afforded by outdoor life. Constitutional activity prevents circulatory stasis. Confinement and inactivity favor atrophy from disuse. Weight-bearing without fixation, under the most favorable circumstances, may result in recovery, but with ankylosis in deformed postures. Weight-bearing with the Lorenz short hip spica facilitates the employment of outdoor life and shortens the time of treatment. The results show full function when it is used in suitable cases. Rapid recovery follows in some cases from the formation of abscess, and in others there is slow but permanent recovery. Beck's bismuth injection may be used in sinus tracts. There may be sound ankylosis in patients previously confined to bed or when there is atrophy from disuse produced by using crutches. Muscular development of the atrophied leg often demands frequent changes of casts, thereby indicating the benefits obtained. Furthermore, weight-bearing with fixation aids in securing the beneficial influences of Bier's hyperemia. Pathologic dislocations may occur with improper position of fixation. The most favorable posture is that of 20 degrees of flexion, 20 degrees of abduction and 5 degrees of external rotation. The method does not appear to be applicable to debilitated patients without the temporary aid of crutches.

Vaccine Therapy in Joint Tuberculosis.

DR. EDWARD H. OCHSNER, Chicago: In the treatment of joint tuberculosis, as in all other forms of tuberculosis, too

much attention can not be paid to hygienic conditions and suitable food. In addition, we must strive to prevent secondary infection, we must secure proper immobilization and I believe that we can considerably hasten recovery and favorably influence the final result by vaccine therapy, as controlled by the reading of the opsonic index. If patients with joint tuberculosis come to the surgeon early enough, if they are placed under proper hygienic conditions, if suitable measures are adopted for the prevention of secondary infection, if the joints are perfectly immobilized for a sufficent length of time, and if vaccine therapy is instituted under the control of the opsonic index, I believe that the great majority of patients will secure perfect or nearly perfect functional and anatomic results.

Discussion on Joint Tuberculosis.

DR. DE FOREST WILLARD, Philadelphia: The results obtained by Dr. Wilson, if carefully analyzed, are about the same as from other methods of treatment. If we can get these patients early, there is no question but that all of us can secure good results. Fresh air and outdoor life are important. The ambulatory treatment should not be used in the acute stage. Vaccine therapy and the Bier treatment are good, but no one thing will cure tuberculosis. The same applies to injections. We can do more in conquering tuberculosis by building up the resistance of the individual than by attempting to destroy tubercle bacilli.

DR. RUSSELL BELLAMY, Wilmington, N. C.: Climate is the most important factor in dealing with these cases. Seven-eighths of all the patients in the hospital for deformities in New York are from the slums of New York. I have seen splendid results from the use of the plaster spica.

DR. EMIL G. BECK, Chicago: I would hesitate to use a needle where it is possible to inject material into a vein, because death would follow in two minutes. I have proved this in experiments on guinea-pigs. I advocate the injection of the bismuth paste after opening the abscesses.

DR. EUGENE CARAVIA, New York: I advocate the use of Cuguillere's serum, which consists of allylum sulphid 1 gram, tincture of myrrh 1 gram, and Hyem's glycerinated serum 100 grams. It is a yellow liquid, with a strong odor of garlic, and is non-toxic. One hypodermic injection of from 2 to 5 c.c. is given every week. I have used this serum in two cases of adenitis of the neck, one small subcutaneous tumor of the breast, one white swelling of the knee, and one periostitis of the tibia. No other treatment was used. From three to twelve injections were needed to effect a cure, which was permanent since months and years after the cessation of the treatment there has been no relapse and no tuberculous manifestations in any part of the body. Temperature became normal, appetite returned or increased, pain stopped, swellings disappeared, suppuration dried up, fungosities were resorbed, and the movements of the articulations involved were preserved.

DR. A. T. CABOT, Boston: Patients suffering from pulmonary tuberculosis are required to exercise care in the disposal of their sputum, but practically no attention is paid in hospitals or elsewhere to the disposal of surgical dressings from tuberculous cases. Such dressing should be treated immediately with boiling water or some suitable antiseptic, or burned.

DR. TIENSTALL TAYLOR, Baltimore: Weight-bearing should not be used in acute cases and should be confined to hospital and sanitorium treatment, as it is sure to be meddled with if tried at home. The bivalve spica is best, because it will permit massage. Climatic treatment is important, and vaccine therapy is also useful. Braces and the prolonged use of traction have been much overdone. On the other hand, I do not agree with Lorenz that early ankylosis in these cases is desirable.

DR. H. A. WILSON: The museums are full of specimens showing joint destruction from tuberculosis. A movable and functionating joint is always preferable when such function is not apt to be destructive to the surrounding tissues and to the health of the patient. But when there is great destruction the question comes up as to whether it is better to have mobility or ankylosis. I find that I am unable to answer this question.

DR. E. H. OCHSNER: Vaccine therapy is not a cure at all; it is only a very valuable adjunct to the ordinary modes of treatment. By the proper application of vaccine therapy I have been able to reduce the quantity of connective tissue in the healing of tuberculosis. I am sure that vaccine treatment will reduce the mortality somewhat. . Within the last two years I have had several patients with joint tuberculosis who came with great sinus formations and secondary infection, and who would have died had they come five years earlier, or before the use of the vaccines. I firmly believe that morbidity will also be reduced by vaccine therapy in conjunction with other measures.

SECTION IV.—TUBERCULOSIS IN CHILDREN— ETIOLOGY, PREVENTION AND CURE.

Value and Reliability of the Ocular Reaction to Tuberculin in Differential Diagnosis.

DR. E. MATHER SILL, New York: Any new method of treatment or diagnosis meets with more or less enthusiasm and skepticism until it has been thoroughly demonstrated by extensive use to be a reliable, practicable and safe method. The ocular reaction to tuberculin has now been used in a sufficiently great number of cases to insure its safety and prove its reliability and value in the diagnosis of tuberculosis. Many cases of tuberculosis can be detected by means of this simple test which without it would have gone undiagnosed. When properly used, the test is without danger and can be used by the general practitioner to great advantage, and in it we have a means of differentiating tuberculous conditions from other diseases. It is now well known that tuberculosis in infancy and childhood is largely a disease of the lymph nodes and in this respect differs from tuberculosis of adult life and in many respects is more difficult of diagnosis than that of adult life. The ocular reaction is present in both clinically active and clinically inactive tuberculosis, but is not present in cases in which there is no tuberculosis. It is of special value in lesions outside the lungs and when it is difficult to get the sputum and in cases in which the clinical symptoms are obscure. My experience corresponds closely with that of Comby and Calmette in regard to the reaction. In all my tests I have instilled one drop of a 1 per cent. solution of tuberculin into one eye. I have made the test on 200 infants and young children, of whom all the clinically tuberculous gave a positive reaction; 90 per cent. of the very suspicious cases gave a positive reaction, 18 per cent. of the suspicious cases gave a positive reaction, and none of the apparently non-tuberculous children with a variety of other ailments, slight or otherwise, gave a reaction. No bad results have been obtained from the Calmette test.

Frequency of Tuberculosis in Childhood.

DR. C. VON PIRQUET, Vienna: As the result of 1,400 examinations with the cutaneous tuberculin test at the Escherich clinic, a table has been prepared which shows the increase of infection with tuberculosis from year to year. These results have been compared with the statistics made with the post-mortems of children. Of the different kinds of reactions which appear in early and later childhood one is significant and should be thoroughly understood. International statistics might well be collated in the following manner: That children of all ages, for instance, kindergarten and school children, be tried with the cutaneous test on the first day; on the following day all should be inspected. Those who show a reaction should be noted as belonging to the class of "early reaction," which practically means having had the infection in the latter years. A week later those children who showed no reaction on the first trial should be again tried. A great percentage of older children will now react, and they belong to the class of "secondary reaction," which generally means having had the infection in previous years. Those children who have not reacted on either of the above occasions belong to the third class, which can be considered as those practically free of tuberculosis

In order to have a certainty with regard to the third class, one could inject the non-reacting children on the following day with 1 mg. of tuberculin, according to the proposal of F. Hamburger, and inspect those children the next day as to the local subcutaneous reaction. This trial, of course, would only be possible in hospitals, whereas in schools one must be contented with the cutaneous trials, which can be made without any inconvenience to the children. In this way one could take note in the different towns of the percentage of infection and the ages at which such infections occur, and consequently could form conclusions as to hygiene.

Clinical Observations on the v. Pirquet Reaction in Children.

DR. HENRY HEIMAN, New York: Fifty-seven children were vaccinated according to the v. Pirquet method at the Mt. Sinai Hospital in the children's service of Dr. Koplic and myself. Twenty showed a positive reaction and 37 a negative one. The 20 children who gave a positive reaction suffered from the following morbid conditions: Tuberculous adenitis, 3 cases; tuberculous meningitis, 2; tuberculous peritonitis, 2; solitary tubercle of the brain, 1; pulmonary tuberculosis (probable), 2; pleurisy with effusion, 4; bronchopneumonia, 1; glioma of retina and multiple dactylitis, 1; amaurotic family idiocy, 1; rickets, 1; intestinal intoxication, 1, and sarcoma of the kidney, 1.

The 337 negative cases included the following diseases: Amblyopia congenital, 1; chronic arthritis, 1; syphilitic arthritis, 2; intestinal autointoxication, 1; chronic bronchitis, 3; bronchopneumonia, 3; enterocolitis, 2; empyema, 3; pulmonary gangrene, 1; amaurotic family idiocy, 1; congenital idiocy, 1; marasmus, 1; tuberculous meningitis, 8; acute nephritis, 1; pleurisy with effusion, 1; dry pleurisy, 1; lobar pneumonia, 1; pseudoleukemia (v. Jaksch), 1; pyelitis, 1; syphilis, 1; cerebellar tumor, 1, and typhoid, 1. Eighty per cent. of the cases of tuberculous meningitis (8 out of 10) gave a negative reaction. This is probably due to the fact that the vaccination was performed during the terminal stage of the disease, when the absence of antibodies or bacteriolysins prevented the occurrence of a positive reaction.

An Aid to the Diagnosis of Tuberculosis in Infancy and Childhood by the Cutaneous Inoculation of Diluted Tuberculin (Pirquet Method).

DR. LOUIS FISCHER, New York: The diagnosis of infantile tuberculosis is frequently obscure, and when associated with the acute infectious diseases or occurring as a sequel to them the diagnosis is difficult to make. Syphilitic manifestations frequently present clinical pictures greatly resembling tuberculosis. The cutaneous or von Pirquet method has proved an aid in strengthening the suspicion of latent tuberculosis. The ocular reaction of Calmette has been attended by severe ocular complications, both in this country and abroad. No such danger has been recorded with the von Pirquet method. After scarifying three small areas of skin, two of which are inoculated and a third left as a control, there should be found in twenty-four hours, or at the latest forty-eight hours, an elevated papule, about 10 millimeters in width, which may be called a positive reaction. There is no rise of temperature or chill, and no general systemic disturbance. No unpleasant after-effects have been recorded. If no reaction takes place after the first inoculation, a second inoculation may be given several weeks later without any danger or ill effects. The reaction, if positive, will be visible in very young infants in from five to seven days. In older children it will sometimes remain several weeks. The reaction was positive in tuberculous meningitis, tuberculous coxitis, as well as in pulmonary tuberculosis and in a tuberculous osteomyelitis.

Overcoming the Predisposition to Tuberculosis and the Danger from Infection During Childhood.

DR. S. ADOLPHUS KNOPF, New York: Direct bacillary transmission from a tuberculous parent is possible but not frequent. A child inherits a predisposition which, as a rule, is most marked when the mother is the tuberculous parent and when the progenitor is in the latter stages of the disease. To overcome a tuberculous predisposition, which may be interpreted as a physiologic poverty, the treatment should begin before the birth of the child. The best hygienic environment, freedom from care and worry, the best of food, frequent deep breathing, or, better still, systematic respiratory exercises, are the best means for the tuberculous mother to help to overcome a tuberculous predisposition of her offspring. Among the poor, private or municipal philanthropy should aid such families so that the mother may not be obliged to work too long before or too soon after the birth of the child. The newly-born child should likewise be assured the best hygienic environment and the best and purest cow's milk for its food if the mother is the tuberculous parent. As the child grows up it should be watched carefully. Adenoids and other obstructions to free breathing should be removed, judicious hydrotherapy should be inaugurated, so that the child becomes resistant to so-called colds, and as soon as the intelligence of the child permits it should be taught respiratory exercises and induced to practice them frequently and always in good pure air.

A child predisposed to tuberculosis should not go to school before its eighth year. Its mental training should not be pushed to the extent of becoming a hindrance to its physical development. Outdoor singing and outdoor recitation, weather permitting, should be encouraged in all schools. Postnatal infection should be prevented by teaching the mother the usual precautions in relation to kissing, coughing (drop infection), use of different utensils and extreme care with the expectoration. When the social condition of the mother will not assure the freedom from danger of postnatal infection or not permit the installation of the proper treatment of the predisposition, the child should be placed either in a children's sanatorium or in a good country home.

Diagnostic Value of Lumbar Puncture in Acute Tuberculous Meningitis of Children.

DR. FREDERIC E. SONDERN, New York: The bacteriologic examination of the cerebrospinal fluid renders the best service in diagnosis, though the cytology is also important, particularly in the absence of organisms. The practical information obtained from the pressure, appearance, density, amount of albumin and other chemical data, the amount of sediment, the tendency to coagulation, the toxicity, the freezing point, and the transmission of some administered drugs to the cerebrospinal fluid, is often of decided value, but always secondary to the above. The examination should be as complete as circumstances and the available amount of the specimen permit. The chief diagnostic and differential features are: In tuberculous meningitis the pressure of the cerebrospinal fluid is increased; the appearance usually transparent and colorless, occasionally slightly opalescent; the density is not much increased; the albumin between ¾ and 2 per mille by weight; coagulum slight and frail; sediment slight; cytology, average number of lymphocytes 86 per cent.; bacteriology, tubercle bacilli present in 88 per cent. of cases. If tubercle bacilli are present, a relative polynuclear increase may indicate mixed infection. In absence of bacilli, if lymphocytes predominate, search should be repeated, and a possible meningism of typhoid, pneumonia, etc., kept in mind. Purulent specimens usually offer no difficulty in diagnosis. The relative polynuclear cell increases and almost invariable presence of intracellular diplococci distinguishes cases of cerebrospinal meningitis.

Hygienic and Climatic Prophylaxis of Tuberculosis in Childhood.

DR. FREDERICK L. WACHENHEIM, New York: Good general nutrition is one of the best safeguards against tuberculosis in children; to secure this we often have to combat disturbances of digestion or neurotic anorexia. To stimulate the appetite and digestion nothing is so useful as exercise, preferably out of doors. Over-exertion is harmful and may even predispose to tuberculosis. It is best to regard exercise merely as a method of hardening, which is the sovereign prophylactic as well as treatment of tuberculosis. Cold fresh air ranks first among our hardening measures, cold bathing second; both are to be employed guardedly, especially in infancy, with gradually increasing strenuousness as the child grows older, excess in this direction being also harmful. When the child's native climate

precludes sufficient outdoor life a more genial region should be sought, taking care not to cause enervation through too high temperatures. With regard to cold bathing, it should not be attempted in infancy; in later childhood sea bathing is of especial tonic value. Hardening by means of well-regulated clothing is still in the empirical stage, individual idiosyncrasy is still the main guide, but absurdities like seminudity are to be shunned; we decide sufficiency in clothing in children by noting the temperature of their extremities, overheating being at least as injurious as chilling.

Prognosis of Pulmonary Tuberculosis in Children Under Fifteen.

DR. FRANK A. CRAIG, Philadelphia, based his paper on the study of 193 cases of pulmonary tuberculosis occurring in children, the ages ranging from sixteen months to fourteen years. Tables are given comparing the results to the patient's condition when first coming under observation. The special topics considered were: Sex, age, race, color, duration of disease, amount of pulmonary involvement, stage of disease, source of infection, pulse and respiratory rate, temperature, sputum and urine examination, complications, method of treatment (sanatorium, dispensary, or city hospital), and comparison with the results obtained in adults.

The amount of involvement gave the most accurate information from the standpoint of prognosis. Among the patients with one or two lobes involved with cavity formation, or with more than two lobes involved, with or without cavity formation, in no instance was the disease "arrested" or "much improved." Next in value was the pulse rate. No patient with a pulse of 80 or less became progressively worse or died, and no patient with a pulse rate above 120 had "disease arrested" or "much improved." The respiratory rate also gave valuable information. None of the other factors gave very positive indications. The older children gave somewhat better results than the younger, and the patients treated in the sanatorium did a little better than those treated in the dispensary and hospital. The results in children were better than in adults when the disease was not extensive, but not so well when the disease was advanced.

Hypertrophy of the Lymphoid Tissue: Its Relation to Tuberculosis.

PROF. P. NOBECOURT and DR. LEON TIXIER, Paris, investigated 22 children, from 31 months to 14 years, with adenoid vegetations and enlarged tonsils; none had open pulmonary tuberculosis.

Fifteen of the children presented no clinical signs of tuberculosis; 5 had doubtful signs (peripheral polyadenopathy, mediastinal adenopathy, apical bronchitis); only 3 presented undoubted symptoms of tuberculosis; 2 had beginning apical tuberculosis, and 1 tuberculosis of the cervical lymph glands. Subcutaneous injections of tuberculin—0.1 milligram—were given to 18 children; reaction was positive in 7. Only 2 of the children were considered clinically tuberculous; in the third tuberculous child no tuberculin tests were made; 2 children were suspected of bacillose (cervical and mediastinal adenopathy). The cuti-reaction was performed in 18 children; it was positive in 12, especially in 2 manifestly tuberculous, and in 2 suspected individuals who had reacted to the subcutaneous injection of tuberculin. The conjunctival test was made in 13; it was positive in only 4, especially in 2 tuberculous children.

To sum up, 5 children out of 22 may be regarded as entirely free from tuberculosis; all, however, enjoyed excellent general health. The tonsils were inoculated into guinea-pigs. Some of the animals died too early to give any information in regard to tuberculosis; 7 which were dissected after the usual interval showed no tuberculous lesions. In this number there were 2 animals which had been inoculated with lymphoid tissue obtained from 2 tuberculous children. All but 8 of the inoculations of adenoid vegetations are left out of consideration. In only one case a guinea-pig developed tuberculosis, although the animal had been inoculated with vegetations obtained from a child who was not clinically tuberculous, and in whom both the subcutaneous test and the cuti-reaction were negative, although he reacted positively to the conjunctival test. The tonsils were studied histologically in 16 cases, and the adenoid vegetations in 15. Examination of the sections did not reveal a single tuberculous focus. Additional sections were studied from the adenoid vegetations which had caused tuberculosis in the guinea-pig, but the search for lesions was fruitless. Preparations stained after Ziehl's method failed to show a single tubercle bacillus. The infection was no doubt produced by a few bacilli that happened to be on a small part of the nasopharyngeal mucous membrane and did not have time to produce specific lesions.

Larval tuberculosis of the palatine and pharyngeal tonsils is exceptional. In children who are evidently tuberculous, but have no open pulmonary lesions, neither animal inoculation nor histologic examination of the tissues revealed the presence of tubercle bacilli or of bacillary lesions. In the only case in which the inoculation of adenoid vegetations produced tuberculosis in the guinea-pig, the child was not tuberculous and did not react to the conjunctival test, and the tissues showed no tuberculous alteration. Hence there is nothing to prove in the cases studied that the lymphoid tissue of the pharynx is the port of entry of the bacillary infection.

The Seashore and Fresh-Air Treatment at Sea Breeze Hospital of Tuberculous Disease of the Bones, Joints and Glands in Children.

DR. JOHN W. BRANNAN, New York: During four years 136 patients have been under treatment, of whom 68, exactly one-half, had spinal or hip disease, which in 81 per cent. was in an advanced stage at time of admission to the hospital. Forty-two of these 68 have been discharged, and of these 36 per cent. were cured and 19 per cent. improved, making 55 per cent. who were either well or progressing to recovery when they left the hospital. Among the discharged cases were 22 in which the knee or other joints were affected. Although 80 per cent. were in an advanced stage, 73 per cent. were cured and 13 per cent. were improved. To secure the best results in bone and glandular tuberculosis the patient must spend the entire time in open air, and the seashore offers especial advantages for outdoor life for children. Subscriptions to the amount of $250,000 have been received for a permanent hospital, and New York City has promised a site for the hospital, and to maintain it when it is completed. There has been a temporary delay in securing a site because of the present financial stringency.

A Contribution from Orthopedic Surgery to the Study of Tuberculosis.

DR. ADONIRAM B. JUDSON, New York: Patients affected with tuberculosis will recover, I believe, and new cases will not occur if the environment, local and general, is favorable. That hip disease recovers without treatment except correction of environment has been learned from clinical experience and from literature, and if this occurs in hip disease there are reasons in the comparative anatomy and physiology of the lung and the hip for the belief that the same and even better results will follow in consumption. It is not possible at present to secure for all, the sick and the well, the desired general environment which includes abundant food, innocuous occupation and sanitary housing, but observations in hip disease indicate that local rest should be secured in consumption by superficial breathing, the cessation of coughing and the avoidance of exercises which quicken the respiration.

The Possibility of Avoiding Scar Formation in Softened Tuberculosis of the Cervical Glands.

DR. WILLY MEYER, New York: By following the rule of making the incisions in the course of the skinfolds of the neck when operating for softened cervical tuberculous adenitis, even long cuts may show very little later on. Still there will be a scar correspnding to the length of the incision. Bier's hyperemic treatment enables us to reduce such scars to a minimum if the method is properly carried out with the help of the neck-band, as well as suction glasses, especially if combined with open-air treatment and, of course, if the other means at our disposal in the treatment of surgical tuberculosis are observed. The lung suction mask, originally designed for the

physical treatment of tuberculous pulmonary disease, also greatly improves the general condition of the blood, a point of great importance in dealing with these usually anemic patients.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifth-eighth Annual Session, held at Cambridge Springs, Sept. 14-17, 1908.

(Concluded from page 1543.)

Acute Intestinal Obstruction.

DR. LUTHER B. KLINE, Catawissa: The abnormal states or conditions acting in a causative relation to acute intestinal obstruction are so various and distinct, and the symptoms attending different causes so common, that, in order to appreciate their significance, it is necessary to consider them separately. The etiology bears an important relation to the symptoms, diagnosis and treatment of this affection, and includes strangulation, intussusception, volvulus, foreign bodies and hernia. The symptoms are abdominal pain of an acute character, nausea, vomiting, tympany and increase of temperature. In consequence of the sudden onset and rapid development of the disease, diagnosis is most important. Having many of the same symptoms as appendicitis, careful investigation may be necessary to discriminate between them. The treatment is closely associated with the diagnosis; the latter being definitely determined in favor of acute obstruction, little time should be consumed before resorting to surgical interference.

Intestinal Obstruction in Connection with Tuberculosis or Tuberculous Peritonitis.

DR. HENRY M. NEALE, Upper Lehigh: Obstruction of the bowels, due to tuberculous deposit, is a much more common condition than is usually supposed. Operation is of value if proper discrimination is made. Exploratory incision is advisable in all doubtful cases in which it is possible, and at the same time feasible.

DISCUSSION.

DR. C. H. MINER, Wilkes-Barre: There are many structures from which tuberculosis within the abdomen might arise, hence differentiation is difficult. Obstruction of the intestine in tuberculosis may be due to a healed lesion or to thickening of the intestinal wall. Dilatation of the intestine above the obstruction may be enormous, while below it the lumen may be much reduced. While an exploratory incision is always justifiable, it is true that sometimes absorption takes place with relief of symptoms.

DR. G. W. GUTHRIE, Wilkes-Barre: The stomach should be washed out both before and after operation. In all cases of intestinal obstruction the treatment is to operate early. When the bowels do not act the abdomen should be opened and the cause ascertained.

Early Signs of Extrauterine Pregnancy.

DR. RALEIGH R. HUGGINS, Pittsburg: The time has arrived when the diagnosis should be made before rupture in at least 90 per cent. of cases. Unfortunately, physicians are not always called until serious symptoms have occurred. One of the most important factors in its early recognition is a careful study of the patient's history, not for a month, but for a number of years previous to the development of symptoms of a suspicious character. History suggestive of previous tubal infection will be found in the majority of cases.

Extrauterine Pregnancy.

DR. CHARLES STILLWAGEN, Pittsburg, reported a case of secondary abdominal pregnancy operated on at the end of the fourth month. He advocates deferring operation until the acute symptoms have subsided.

DISCUSSION.

DR. G. E. SHOEMAKER, Philadelphia: The most significant thing to me is the brown vaginal discharge. The question of early or late operation is an open one, but I incline to operation as soon as diagnosis has been made and suitable preparation can be carried out.

DR. J. G. CLARK, Philadelphia: When the patient is in shock no operation should be done until reaction has occurred. To operate when there is air hunger and pulselessness is to precipitate death. Operation without proper preparation can only do harm. When a patient is slowly rallying from shock is a bad time to operate. It is best to consider all features of the case and take a middle ground in reference to operation —neither too radical nor too conservative.

DR. E. P. DAVIS, Philadelphia: If ectopic gestation is diagnosed, our plain duty is to remove it. In case of tubal abortion operation should also be done. In case of rupture, if conditions are favorable for operation, it should be carried out. If conditions are unfavorable, delay should be exercised.

DR. C. STILLWAGEN: In 28 patients operated on there has not been recurrent hemorrhage. The hemorrhage is greater in tubal abortion than in rupture.

SYMPOSIUM ON POLIOMYELITIS.

Symptomatology of Acute Anterior Poliomyelitis.

DR. JAMES H. MCKEE, Philadelphia: The onus of the future clinical study of this disease must rest largely on the family physician. While anterior poliomyelitis occasionally appears after one of the infectious diseases of childhood, it seldom has anything behind it. When a young child is suddenly seized in the warm months of the year with moderate fever, vomiting, constipation or diarrhea, pain in the back and legs, some stiffness of the spine, sweating and possibly some disturbances of the consciousness, the attending physician should give anterior poliomyelitis a prominent place in the list of diagnostic possibilities. Given such a history and observing at a later date a flaccid paresis (of parts mentioned), accompanied by muscular and bone atrophies, absence of reflexes, failure of response to faradic currents, coldness and cyanosis of the surface, etc., there is little difficulty in diagnosticating a spinal lesion of this nature. There remain some things to be learned concerning the early symptomatology of anterior poliomyelitis.

Treatment of Poliomyelitis.

DR. THEODORE DILLER, Pittsburg: Rest is by far the most important element in the treatment of the acute stage of the disease. The affected limbs should be placed on pillows in the easiest positions, and when there is much tenderness it is well to wrap them with cotton. Sand bags may be placed around the affected members to keep them in position and to retard deformity. From the beginning the physician should be on the outlook for deformity due to contraction of unopposed muscles. This should be combated by the use of padded splints, and occasionally elastic bands will be found useful. A purgative, such as calomel or castor oil, is of value at the outset, and later an alkaline diuretic containing a moderate dose of bromid. Because of the pain and distress produced by electricity, I seldom use it, believing that in the chronic the same amount of good may be derived from massage, gymnastics and passive movements. Orthopedic treatment is of the utmost importance. Definite efforts should be made by philanthropic individuals and societies to secure for poor children the benefits of modern orthopedic treatment.

DR. FRANK F. WREY, New Castle, contributed a paper on the epidemiology of acute anterior poliomyelitis.

Discussion on Poliomyelitis.

DR. CHARLES W. BURR, Philadelphia: The higher death rate in epidemics of poliomyelitis than in sporadic cases, I believe, is explained by the fact, not that the death rate is smaller in the latter cases, but that the men who make hospital figures see only the chronic cases. If the word poliomyelitis is confined to its true meaning, disease of the anterior horns, the cases showing inflammation throughout the spinal cord, inflammation of the meninges of the cord and of the brain, are not poliomyelitis at all. This leads to the theory that poliomyelitis is due to some sort of a poison, arising from within or without. Whether it be a bacterial poison or an organized poison from some other source, it is to-day impossible to state.

DR. CHARLES K. MILLS, Philadelphia: I have seen more than the usual number of cases of poliomyelitis during the last few years. The cases called poliomyelitis, occurring after the ordinary febrile diseases, are not of the same character, though some of them closely simulate poliomyelitis. I believe that the disease may be poliomyelitis and that yet there may be associated with a true poliomyelitis symptoms indicative of the occurrence of a root neuritis or a form of truncal neuritis. Cerebral symptoms do occur in these cases and are due to an associated polioencephalitis. If anything should be emphasized in regard to treatment, it is conservatism in the early stages. I believe in rest and the use of calomel and a moderate use of salicylates and bromids. Orthopedic treatment should not be resorted to too early, but sooner or later it often becomes necessary. One does not know what can be done in an orthopedic way until several weeks and months have elapsed, for he does not know what the residual phenomena will be. Electrical treatment is not of much value unless pursued after a special fashion. Like the orthopedic treatment, it also should be postponed for a few weeks or months.

DR. T. L. KANE, Kane: A case which looked exceedingly like intestinal obstruction came into our hospital during the epidemic of poliomyelitis at Ridgay. From the appearance of the child and at the urgent request of its parents we operated, although there was some fear of poliomyelitis. On opening the abdomen every sign of acute peritonitis was found, but no obstruction whatever. The bowels were easily stripped into the colon and the gas and fluid were discharged through the anus. The intestines were emptied and put back. Although relief was observed, symptoms of paralysis developed and the child died in a few days of paralysis of respiration.

DR. T. DILLERS: The placing of sand bags beside paralyzed legs and placing the legs on pillows may be regarded as a sort of orthopedic treatment, and it is this that I had in mind particularly when I mentioned that orthopedic treatment should be begun early. Such minor orthopedic treatment can be carried out by the attending physician. This should be looked after carefully at the earliest possible moment.

Importance of Starches in Infant Feeding.

DR. WILSON WELLINGTON FEIDT, Bellefonte: I would make a plea to the many general practitioners of large experience to recognize the fact that percentage feeding with cream mixtures is not practical, as too many errors will occur, and that simple dilution of whole milk with water and barley water is percentage feeding in a less complex form; that the cream formulas have done more to bring disrepute on infant feeding than any other factor, and that flexibility is an essential rule and of more importance in the successful feeding of infants. The principle underlying dilution of milk is the fact that the proteids do not cause the indigestion.

The Non-Medicinal Treatment of Disease.

DR. DAVID RIESMAN, Philadelphia: The introduction of non-medicinal measures of treating disease constitutes one of the greatest advances in medicine. Drugs alone seldom achieve the cure of any malady. Indeed, there are only four diseases for which we have specific remedies—malaria, syphilis, diphtheria and possibly cerebrospinal meningitis. A dollar will usually cover the medicinal remedies that may be required in an ordinary case of typhoid, and the same is true of pneumonia. In typhoid I not only insist on patients receiving large quantities of water by mouth, but I give salt solution by the bowels with satisfactory results. In chronic heart disease drugs have their place; but who would deny the value of physical and mental rest and of careful diet. Non-medicinal measures, either alone or judiciously aided by drugs, are of value in Bright's disease: diet, water, vapor baths, proper clothing and climate. In uremia two measures are of pre-eminent importance: sweating and bleeding. The majority of patients with dyspepsia will recover if put on a proper diet, taught to eat slowly and to chew their food, and sent on a vacation. In chronic constipation, large amounts of water, especially on rising and retiring, a diet largely vegetarian, regular habits, exercise and massage, if persisted in, will bring about the desired results. It is principally in nervous diseases that non-medicinal measures are supreme. We have not realized that the psychic element requires psychic treatment. It was this serious oversight that drove the laity into the arms of Christian Science, faith cures, and other forms of mysticism. Christian Science has brought vividly before the people certain ideals of great curative value long neglected by the medical profession, which ideals, however, are neither new nor the invention of Mrs. Eddy. Suggestion, autosuggestion, self-forgetfulness, the strengthening of the social consciousness are the elements of the medical creed of Christian Science and they are of undeniable value. They have been used in a desultory way by physicians from time immemorial, but their real importance, as an integral and indispensable part of our treatment of nervous diseases, has not long been recognized. Non-medicinal therapy is illustrated in the good results obtained by the class treatment of tuberculosis. Medical schools have not yet risen to their duty and possibilities in respect to non-medicinal measures. I should like to see drugs and physical measures put on the same level as approved weapons in the battle with disease.

Other Papers Read.

"New Method for the Quantitative Estimation of Albumin in Urine," Dr. Edward H. Goodman, Philadelphia; "Treatment of Alcoholism," Dr. Lowell M. Gates, Scranton; "Chronic Appendicitis Causing Chronic Diarrhea of Several Years' Standing," Dr. Joseph Sailer, Philadelphia; "Operative Treatment of Fistula in Ano," Dr. W. M. Beach, Pittsburg; "Importance of First Aid Dressings in Wounds in Civil Life," Dr. G. W. Guthrie, Wilkes-Barre; "Reports of 200 Surgical Cases Treated in 1907 with Reference to Accidents, Errors and Results," Dr. J. M. Wainwright, Scranton; "Six Hundred and Fifty-eight Cases of Spinal Anesthesia," Dr. W. Wayne Babcock, Philadelphia; "Scope of Local Anesthesia in General Surgery," Dr. L. J. Hammond, Philadelphia; "Color Photography by the Lumière Process," Dr. C. B. Longenecker, Philadelphia; "X-Ray Diagnosis of Joint Tuberculosis," Dr. James K. Young, Philadelphia; "Tumors of the Salivary Glands," Dr. John Speese, Philadelphia; "Roentgen-Ray Interpretation of Fractures," Dr. Stewart L. McCurdy, Pittsburg; "Redundant Sigmoid," Dr. J. G. Clark, Philadelphia; "Exstrophy of the Bladder Treated by Extraperitoneal Implantation of the Ureters into the Rectum," Dr. J. J. Buchanan, Pittsburg; "Pancreatitis," Dr. W. L. Rodman, Philadelphia; "Malignant Adenoma of the Cervix with Vaginal Implantation at the Point of Contact Eleven Years After Operation," Dr. George E. Shoemaker, Philadelphia; "Drainage in Surgery of the Pelvic Organs," Dr. F. Hurst Maier; "Bacterial Vaccines and the Opsonic Index," Dr. A. Parker Hitchens, Glenolden; "Analytic Description of the Eye as an End Organ," Dr. Joseph E. Willetts, Pittsburg; "Malignant Tumors of the Faucial Tonsils," Dr. George B. Wood, Philadelphia; "Gonorrheal Ocular Metastases," Dr. Edward Stieren, Pittsburg; "The Blood in Acute Mastoiditis," Dr R. Milligan, Pittsburg; "Hot-Air Current in Ear Affections," Dr. L. L. Doane, Butler; "Fees and Fee Bills," Dr. W. H. Hartzell, Allentown; "Contract Practice," Dr. John B. Donaldson, Canonsburg; "Fees for Services to Corporations," Dr. George W. Wagoner, Johnstown; "Influence of Hospitals on the Doctor's Income," Dr. C. H. Ott, Sayre; "Influence of Hospitals and Dispensaries as Viewed from the Outside," Dr. J. B. Walker, Philadelphia; "Medical Words Commonly Mispronounced," Dr. Frederick A. Rhodes; "Surgical Treatment of Some of Our Medical Cases," Dr. W. H. Hartzell, Allentown; "How to Prevent Spread of Disease in Our Public Schools," Dr. A. C. Brooks, Wilkes-Barre; "Value and Results of Eight Years of Fumigation and House Isolation for Contagious Diseases in Williamsport," Dr. C. W. Youngman, Williamsport; "Plea for More Painstaking Diagnosis in Chronic Gastric Disturbances," Dr. W. H. Howe, Shingle House; "Economic Loss to Pennsylvania in 1906 from Deaths from Preventable Diseases," Dr. S. Egbert, Philadelphia; "Rational Therapeutics," Dr. S. Solis-Cohen, Philadelphia; "Treatment of Tuberculosis in Rural Districts," by Dr. W. H. Brown, Richlandtown; "Dispensary System of Department of Health of the State of Pennsylvania," by Dr. Thomas A. Stites; "Factors in Operative Treatment of Pulmonary Tuberculosis," by Dr. W. W. Babcock, Philadelphia; "Tuberculous Phthisis: Is a Second Recovery Possible?" by Dr. W. F. Dutton, Walkers Mills; "Gallstones, Etiology, Diagnosis and Medical Treatment," by Dr H. C. Hoffman, Connellsville; "Surgery of Simple Types of Goiter," by Dr. J. M. Wainwright, Scranton; "Pathology, Diagnosis and Surgical Treatment of Gastroptosis," by Dr. E. LaPlace, Philadelphia; "Prevention of Retroversion of Uterus After Childbirth," by Dr. E. P. Davis, Philadelphia; "Chromocystoscopy in Functional Renal Diagnosis, Based on Use of Indican," by Dr. B. A. Thomas, Philadelphia; "Difficulties in Diagnosis of Scarlet Fever," by Dr. J. F. Schamberg, Philadelphia; "Treatment of Scarlet Fever," by Dr. F. L. Van Sickle, Olyphant; "Present-Day Therapy," by Dr. J. P. Roebuck, Lititz.

Business Meeting.

The board of trustees recommended to the house of delegates that a committee of three be appointed to act in conjunction with the Board of Public Instruction of the American Medical Association.

WORK OF COMMITTEES.

A resolution was received and referred to the committee on public policy and legislation that the president of the Medical

Society of the State of Pennsylvania appoint a committee of seven to cooperate with the Commissioner of Health of Pennsylvania with a view to preventing the passage of acts inimical to the present vaccination statutes of the state.

The reference committee on scientific business endorsed the work done by the committee on malpractice and concurred in the provision in the medical act providing for revocation of licensure for cause.

The report of the committee on inebriate hospital was heartily endorsed and the committee continued. The suggestion was made that the Pennsylvania bar association be asked to appoint a similar committee to assist in the furtherance of this charity. It was recommended that the members of the state society use their influence with legislators to insure the passage of the bill and that the profession interest the laity.

The committee on religious newspaper advertising was continued and the committee congratulated on the progress made as decided improvement had been noted in the character of advertisements.

ADMINISTRATION OF GENERAL ANESTHETICS.

In the matter of the address of Dr. J. M. Baldy as president of the American Gynecological Association, regarding the administration of general anesthesia, Dr. Baldy was commended for the fearless manner in which he had called attention to an evil undoubtedly existing in a great part of the commonwealth. The secretary-editor was requested to write several editorials on the subject during the year, directing attention to this danger.

RESOLUTIONS ON FOURTH OF JULY, MEDICAL RESEARCH, TRACHOMA AND VACCINATION.

A resolution relating to the Fourth-of-July fatalities was commended and the appointment of a committee of three suggested to devise ways and means for the amelioration of the conditions named.

Dr. Jay F. Schamberg offered a resolution to the effect that a committee of five be appointed by the president of the society, whose duty should be to secure appropriate literature on the medical act, the questions of vaccination and vivisection, and, further, through cooperation with the county societies' committees on public policy, to secure the influence of family physicians with their legislators in these matters.

A resolution was passed congratulating the Surgeon-General of the Public Health and Marine-Hospital Service for providing for the publication of bulletins of comments on the Pharmacopeia.

Dr. Wendell Reber offered a resolution, which was adopted, to the effect that the Medical Society of the State of Pennsylvania appoint a committee to investigate the subject of trachoma, inquiring the probable number of cases existing, obtaining statistics relative to its establishment and control, securing opinions on the subject from the various eye specialists of the state, which material should be presented at the next annual meeting with a working plan for the eradication of the disease.

NORTHWESTERN BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

HENNEPIN COUNTY (MINN.) MEDICAL SOCIETY.

Joint Meeting held in Minneapolis, Oct. 19, 1908.

Dr. F. A. Knight, president of the Hennepin County Medical Society, in the Chair.

In spite of the fact that a noted statesman delivered an address on the same evening, the attendance was large, about a hundred being present.

The Council on Pharmacy and Chemistry of the American Medical Association.

Dean Wulling, president of the Northwestern Branch of the American Pharmaceutical Association, congratulated the physicians and pharmacists of America on having such an institution as the Council, and referred to efforts made by certain leading pharmacists years ago toward the establishment of a central bureau and laboratory similar to the one now conducted by the Council. After a brief reference to the conditions and circumstances which led the American Medical Association to establish this body he spoke of the large amount of work carried on in the office and laboratories of the Council. As an illustration of the work done by the Council in carrying out its purpose of furnishing to physicians accurate and reliable information regarding new and non-official remedies, Mr. Wulling presented the results of its recent examination of the tablets of bismuth, opium and phenol. The recent analysis of the so-called fluidextracts of hydrastis was also cited. He pointed out that physicians, as a rule, were sometimes mistaken in their confidence in the unvarying composition and uniformity of the wares of the average manufacturers and predicted that in self-defense they will have to rely more on the scientific pharmacist. Physicians could obviate all uncertainty as to strength, composition and uniformity of the remedies they prescribed by formulating prescriptions with official standard drugs and preparations for which the Pharmacopeia furnished standards and which conscientious and capable pharmacists always met. He insisted that so long as a community contained some entirely competent pharmacists, physicians should cease complaining of the poor service rendered by a very few pharmacists since their claim can attach to only a few. Mr. Wulling was unwilling to admit that pharmacists, as a class, were so incompetent as some physicians made them out to be. With the large proportion of thoroughly capable pharmacists to be found in every community and with the work of the Council, the physicians could obtain better service now than ever before, and under these favorable circumstances they might be expected to formulate or build up their prescriptions rather than to prescribe ready-made proprietaries.

In conclusion, he referred to the modified rules of the Council as published in THE JOURNAL, A. M. A., Sept. 26, 1908, and suggested that the physicians and pharmacists of Minneapolis indorse them. After reading these modified rules, he introduced the following resolutions:

Resolved:—The Hennepin County Medical Society and the Northwestern Branch of the American Pharmaceutical Association in joint session endorse the modified rules of the Council on Pharmacy and Chemistry of the American Medical Association (published in THE JOURNAL, Sept. 26, 1908), especially the three rules whereby the Council after Jan. 1, 1909, will not accept (1) pharmaceutical mixtures whose titles indicate their therapeutic action or use; (2) pharmaceutical mixtures whose titles are not descriptive of their composition; (3) preparations which are unessential modifications of an official or otherwise well-known preparation.

The resolution was promptly adopted by the joint meeting without discussion.

Mr. Wulling referred briefly to the work done by the Council along lines looking to the stimulating of scientific prescribing and then introduced the following resolution which was also carried unanimously:

Resolved:—The Council is also endorsed in its attempt to provide standards for unofficial non-proprietary preparations and for its efforts toward stimulating scientific prescribing as illustrated in its action on digestive impossibilities and its request to the American Pharmaceutical Association to eliminate Elixir Digestivum Compositum from the National Formulary.

DISCUSSION.

DR. J. F. SCHEFCIK: The work of the Council has done much toward bringing about greater honesty in medical advertising and in enforcing truthful statements on the labels. One of the direct results of the work of the Council is the national Food and Drugs Act. Specific instances of the exposures made by the Council are Pepto-Mangan (Gude) and Vin Mariana.

DEAN WULLING: In certain recent experiments with iron preparations it has been shown that the freshly prepared ferrous carbonate is superior to all other iron preparations. The Liquor Ferri Peptonati cum Mangano of the National Formulary is also a valuable iron preparation.

DR. B. M. BEHRENS: Our materia medica is too voluminous and involved and the physician should thoroughly acquaint himself with a limited number of official remedies and rely on them rather than be carried away by expectations aroused by detail men which are never realized. (At this point the meeting was interrupted by a most unfortunate occurrence. Just

before concluding his remarks, Dr. Behrens fell to the floor. He was helped into an adjoining room, and there it was ascertained that he had suffered a stroke of apoplexy. He was removed to his home soon after.)

DR. J. W. HARRAH, proprietor of the Eureka Drug Store, found considerable fault with pharmacists and ascribed the prevalence of prescriptions for proprietaries to the delinquency of the pharmacist.

MR. C. H. HUHN, Republican candidate for the mayoralty: Physicians for some years past have given no encouragement to scientific pharmacists. This is evidenced by the results of a recent investigation which I made and which showed that about a year ago from 75 to 80 per cent. of the prescriptions dispensed called for proprietaries. Since the Northwestern Branch of the American Pharmaceutical Association has pushed the Pharmacopeial and National Formulary propaganda work, I have noticed a marked falling off in proprietary prescriptions and a proportionate increase in formulated prescriptions.

MR. LA PENTOTIERRE: Pharmacists frequently have to correct errors made by physicians in prescriptions.

DR. WANOUS: I deplore the fact that manufacturers have been using physicians as advertising agents to reach the public. Physicians should protect themselves and the legitimate pharmacist by refraining from writing for proprietaries.

DEAN WULLING: The criticism that pharmacists are poorly qualified may be refuted by referring to the efforts that the leading pharmacists of Minnesota have made toward the enactment of a prerequisite law in pharmacy. The full and active support of such a measure by physicians would aid materially in increasing the percentage of thoroughly competent pharmacists.

"Patent Medicines" and Counter Prescribing.

MR. MCCALL: The dispensing physicians probably over balance the dispensing pharmacists. The pharmacist can be made the physicians' best friend, and by cooperating the two professions can get such legislation and reforms as they desire. Better medical, pharmaceutical and food laws are needed and pharmacists and physicians can be largely instrumental in having them enacted. The prescribing proprietaries and "patent medicines" by physicians is directly the cause of self-prescribing by patients and of counter prescribing by pharmacists. Physicians have made millionaires of the antikamnia and other St. Louis manufacturers by prescribing their wares in preference to official preparations. Physicians really started the public to buy proprietaries. My experience and that of other pharmacists shows that "patent medicines" are on the decline, but that the home prescription business which as yet is in its infancy is taking its place.

DISCUSSION.

DEAN WULLING: Many physicians are now prescribing Pulvis Acetanilidi Compositus where they formerly prescribed antikamnia.

Dispensing by Physicians.

DR. C. A. DONALDSON: The physician is justified in dispensing whenever pharmacists can not render the service the physician has a right to expect. I feel that physicians should not accept any favors from pharmacists, not even prescription blanks. I advocate, however, close cooperation between pharmacists and physicians to the end that the medical practitioner be relieved from the necessity of dispensing even occasionally.

Other Papers.

DR. I. SIVERTSEN sympathized heartily with the pharmacists and expressed the hope that physicians will use no other than the U. S. P. and N. F. products. He asserted that the use of alkaloids by physicians was on the increase, and concluded his remarks by expressing the hope of frequent joint meetings being held.

DR. BARTON cited instances in which the conduct of pharmacists seem aggravating. Every one agreed with him that pharmacists have no right to change physicians' prescriptions nor to prescribe. Dr. Barton objected to the display of "patent medicines" sometimes made by pharmacists.

MR. A. D. THOMPSON said that the day of counter prescribing by pharmacists and dispensing by physicians was rapidly passing away and that the closer association of the two professions recently brought about was creating a better understanding and the feeling of greater sympathy in each other's work and responsibility.

MR. THOMAS VOEGELI could only see good issuing from these joint meetings. He complimented the participants on their friendly and frank candor. He saw in these meetings a foundation for further development that would accrue to the benefit of both professions.

DEAN WULLING expressed the willingness of the Northwestern Branch of the American Pharmaceutical Association to indorse the action of the Minneapolis *Journal* in refusing objectionable medical advertising after existing contracts have expired.

DR. WHETSTONE was of similar mind and added that the Women's Christian Temperance Union had done much to bring about the suppression of objectionable advertising throughout the country.

On motion of Dr. Litzenberg, which was duly carried and seconded, the president of the Hennepin County Medical Society was instructed to appoint a committee to work jointly with a committee of the Northwestern Branch of the American Pharmaceutical Association to express to such local newspapers as refuse to carry objectionable medical advertisements the endorsement of both associations. The committee appointed consisted of Dean Wulling and Dr. Litzenberg.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Third Annual Meeting, held at Kansas City, Mo., Oct. 19-21, 1908.

(*Continued from page 1537.*)

Chorea.

DR. M. A. KELSO, Enid, Okla.: Probably as many remedies and therapeutic agents are used in Sydenham's chorea as in any other disease known. The sanitary surroundings of the patients must be corrected and they must be relieved from all excitement—isolated from crowds and from irritation. Quiet—absolute rest—constitutes the best of all cures. The companions of these patients should be jovial and jolly, but not too hilarious. No sad or solemn occasions should be brought to their view, no horrifying stories or exciting novels read. Frequent and healthful baths should be employed, and, when not excitable, cold applications made to the spine. I have obtained good results by using ice frequently rubbed up and down the spinal column. If ice is not obtainable a towel may be wrung out of cold water and applied frequently to the spine. It will afford great relief. The diet should be of rich, blood-making foods; hence the drugs used should be tonics and regeneratives, especially those working or acting on the blood-making functions.

DISCUSSION.

DR. S. S. GLASSTOCK, Kansas City, Mo.: Season is one of the important factors in this disease, the affection beginning usually in the springtime. The more highly civilized a people, the more susceptible they are to this malady. It is a disease of childhood; practically it does not occur after maturity, especially chorea minor. The disease frequently occurs in girls. We should not lose sight of the close relationship between chorea and rheumatism, nor of the manifestations of rheumatism in patients with chorea. It is a question whether a case of chorea ever occurs or not unless preceded, accompanied, or following rheumatism, or some of its manifestations. In treatment, the child should be removed from excitement and annoyance, and everything should be done to improve the nutrition and to get the patient in a condition favorable for recovery.

DR. W. S. LINDSAY, Topeka, Kan.: In hereditary chorea we have a condition of the sympathetic nervous system which must be entirely independent of any infection. While there may be infection in many of the Sydenham cases, we know that shocks from fright will develop chorea. It is a sympathetic disorder. I think that this is the most complex disorder we have to deal with.

DR. E. H. MARTIN, Hot Springs, Ark.: One form of chorea which we see probably oftener than we do real chorea is the imitative form. History gives us many cases in which girls at boarding schools have been broken up by one case of chorea getting into the school, and dozens of pupils developing the disease thereafter, which was just as real apparently as the original case. The fact that we have this imitative chorea from mere suggestibility shows that it is not necessarily an organic disease, dependent on a lesion, or an affection dependent on an infection. The disease usually develops in those people whose nervous switchboard is a little out of order; their sympathetic nervous systems are a little irritable, and they develop chorea without an organic lesion or without an infection.

DR. G. W. MOODY, San Antonio, Tex.: Chorea is a neurosis in every case. It occurs in neurotic individuals, as all neuroses do. There are two forms, one occurring in grown people, which is chronic, and one occurring in children, which is generally acquired, and which we consider to be infectious in its nature. In the care of these patients two or three things are strongly indicated. The first is rest, freedom from excitement, and freedom from those things in which suggestion plays so prominent a part in all forms of neuroses. Attention should be given to cleanliness and to nutrition, and all those things should be recommended which will conduce to the increase of nutrition.

DR. C. S. MERRIMAN, Kansas City, Mo.: I believe that we might call this disease a starved neurosis. I am inclined to the opinion that chorea, as we see it in children, is an anemic condition, whether due to a heart lesion, to rheumatism, to some form of indigestion, or to anything else. There is an anemic condition—a starved condition—of the nerve centers. It nearly always occurs in children whose digestion is easily affected, whose nervous systems are easily disturbed, and so we can understand how the trouble can develop readily in a child. No matter what the cause of the trouble, rest, good food and little medicine are sufficient to effect a cure. We should not neglect proper bathing and hygienic surroundings.

DR. M. L. PERRY, Parsons, Kan.: I wish to emphasize the importance of rest in these cases of chorea. We should take these patients away from school and from ordinary excitement. It is only in this way that we can enforce rest. It is difficult to make a child take the necessary rest if it is allowed to run about the house, hence it should be put to bed, for at least a considerable part of the day. In addition to rest, we should adopt tonic lines of treatment.

Renal Calculus.

DR. D. W. BASHAM, Wichita, Kan., read a paper on this subject, in which he reported cases and discussed the surgical treatment.

DISCUSSION.

DR. A. K. WEST, Oklahoma City: Some physicians are of the opinion that kidney stone is much more common in one locality in England than in another. In the United States there does not seem to be any stone district. I believe that the character of the water we drink has little, if anything, to do with the formation of renal calculus. I think, however, that certain other conditions predispose to renal stone. Nephritis following scarlatina is likely to be followed by calculus formation. Some authorities have called attention to the fact that clumps of bacteria may form a nucleus for the precipitation of stone, but this has not yet been proved. If a stone forms from acid urine it may be counteracted by rendering the urine alkaline. Unless one has a stone to deal with, if the alakline urine be alkalinized the patient is made worse. If the urine is too alkaline it should be acidified, if possible. Benzoic acid lays claim to that possibility, but I doubt its efficacy. I differ with most surgeons concerning the number of patients with renal colic which should be operated on. Since there are only recurrent attacks, with no evidence of pus, except the passage of calculi with pain for an hour or two at a time, and no after symptoms, I do not refer such patients to surgeons. When there is pus formation or obstruction, pyonephrosis or hydronephrosis, the condition becomes surgical, but to operate on a patient with recurrent renal colic, without any other symptoms and with no constitutional deterioration, is a mistake, because the history of many patients is that they will have three or four attacks and thereafter have no further trouble.

DR. A. R. KEIFER, St. Louis: Location of stone in the ureter, as determined by the character of the pain, the pain being referred to the testicle. I will say that this is a point to which Dr. Bryson gave considerable attention. He stated that in all cases in which the stone was above the brim of the pelvis, the symptoms were never referred to a point below the brim of the pelvis, but that if the stone was along the course of the ureter, there were reflex symptoms in the testicle, and not before that.

DR. W. T. ELAM, St. Joseph, Mo.: The consensus of opinion as to treatment is, I believe, that as soon as a diagnosis of stone in the kidney is made the time has arrived when the condition should be considered surgical. There is no chance of dissolving such a stone or stones by any medicine. When nephrectomy is necessary in connection with pyelonephritis or pyonephrosis, or hydronephrosis, there is not that danger connected with the operation that there would be had one not a diseased kidney to deal with. Primary nephrectomy, however, is to be avoided, if possible. Nephrotomy or nephrolithotomy, with drainage established, is the operation, but if it is found that the kidney is so badly disorganized that it can not be saved, then secondary nephrectomy should be done. That operation is not attended with a large mortality—at least, it has not been so in my hands.

(*To be continued.*)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-fourth Annual Meeting, held at Louisville, Ky., Oct. 13-15, 1908.

(*Continued from page 1536.*)

President's Address: Currents and Counter-Currents in Medical Advance.

DR. ARTHUR R. ELLIOTT, Chicago: I agree with President Burrell, of the American Medical Association, that public instruction should be placed in the hands of a special board; that it should not be taken up by the profession generally; that everything put out should be carefully edited, in order to exclude the sensational and misleading; that the question of the treatment of disease other than preventive should be avoided. The future of medical education of the laity rests in the proper instruction of the young, and this manifestly must be carried on in the schools. Intellectual reform after adolescence is difficult. Few of our present patients will ever rightly understand our principles or our methods, the reasons for our successes, or the explanation of our failures. What they do understand is personal character on the part of the physician, honesty and good sense, kindness and sympathy, liberality and benevolence to rich and poor. Our influence for good with patients depends largely on the degree to which we are able to retain a personal hold on their confidence and loyalty. Too often there is encountered on the part of the public either a spirit of indifference or a disposition to be hypercritical. One contributing factor rests in the weakening of the personal bond, the respect and good understanding existing between physician and patient. No one acquainted with the tendencies of the times will blame the physician for this, and yet it may be asked whether in the scientific devotion of the last two decades physicians have not allowed their relations with the public to become too impersonal. During recent years there has been a tendency to base not only diagnosis and prognosis, but treatment, on the results of laboratory research, on information obtained by instruments, rather than on knowledge gained of specially trained senses and clinical judgment ripened by experience. Careful clinical observation can not be substituted by laboratory investigation, or by mechanical aids. The ideal training of the physician is based as largely on the correct observation of clinical facts as on skillful interpretation of laboratory findings. He who neglects the latter source of knowledge denies himself an invaluable aid to diagnosis, while he who undervalues clinical observation and depends too exclusively on the laboratory becomes a perfunctory observer, a neglectful watcher of the sick, and soon loses his senses of clinical values.

Tropical Diseases and the Mississippi Valley.

DR. GEORGE DOCK, New Orleans, delivered the address in medicine: I wish to emphasize the importance of thorough instruction of medical students in the nature, recognition and treatment of tropical diseases. A pressing need is a more extensive activity in the investigation of tropical diseases in the United States. The valuable results of the schools of tropical medicine of Liverpool, London and Hamburg show what may be done and what should be done by all countries having similar problems to deal with. There is a great activity in the search for new methods of treatment of many tropical diseases. Synthetic drugs, sera and vaccines are being thoroughly explored, as they should be, but the most important part of the treatment is preventive. The essentials for this are the same in tropical diseases as in those of temperate zones. They consist, briefly, in keeping uncontaminated air, water and soil, the extermination of vermin, both large and small, and the preservation of the general health at the highest possible pitch. In the carrying out of a campaign for the prevention of disease it is obvious that much can be gained by having the general direction in the hands of a federal officer, a consummation now near realization. But even more important than this is the recognition of the need of a more distinct and definite effort all over the country. In this regard physicians have a serious and important duty, not by telling people what to do, but by letting them know, as they themselves know, why the changes should be made. Having the knowledge of what should be done in a general way, it will be easier to place the actual work in the charge of experts.

Present Status of Kidney Surgery.

DR. ARTHUR DEAN BEVAN, Chicago, delivered the address in surgery: Floating or movable kidney was first successfully handled by surgical treatment when, in 1880, Hahn introduced the operation of nephropexy. This operation has been extensively employed and has given satisfactory results in suitable cases. Since Henry Morris, in 1880, did the first nephrolithotomy there has been steady improvement in the surgery of kidney stone; and since the introduction of the *x*-ray this development has been much more rapid. The diagnosis of kidney stone can now be made definitely before operation, and modern operative technic has made it possible to remove renal calculi in uncomplicated cases with a low mortality. In tuberculosis of the kidney the disease in 90 per cent. or more of the cases is at first unilateral. A distinct line should be drawn between genital and urinary tuberculosis. Urinary tuberculosis begins always in the kidney, and then descends into the ureter and invades the bladder. Early diagnosis is of extreme importance. In treatment, three methods have been advocated: general hygienic treatment, specific treatment with tuberculin, and surgery. Primary nephrectomy for early unilateral kidney tuberculosis can be done with less than 5 per cent. of mortality. In unilateral renal tuberculosis early nephrectomy is the best treatment. In bilateral renal tuberculosis the treatment should be hygienic, plus tuberculin, until the value of this method has been proven or disproven; in some cases such palliative, surgical measures as nephrotomy and drainage may be of service. Modern surgery can now offer much in the treatment of many diseases of the kidney. Progress is being made rapidly, and one can hope that the future will add much to that which has already been accomplished. Diseases of the kidney belong for the most part to that borderland which must be cultivated by both the physician and the surgeon, in order to bring forth the best fruit. The physician who handles these cases should keep in close touch with the surgical progress being made. He should follow the case to the operating table and see for himself *in vivo* the pathologic conditions which are responsible for the symptoms present. The surgeon must understand fully the value and possibilities of medical treatment before he can arrive at a true estimate of the value of surgical procedures.

Bismuth Paste in Treatment of Rectal Fistula.

DR. J. RAWSON PENNINGTON, Chicago: Beck's paste consists of bismuth subnitrate one part and vaselin two parts. When a stiffer paste is desired from 5 to 10 per cent. each of white wax and soft paraffin are added. I have treated 17 patients with this paste. In 13 the discharge has stopped, the fistula has closed and they seem to be well. This gives about 76.8 per cent. as cured, which I think is rather high. The patient's bowels are emptied before the paste is injected. The point of the syringe is pressed well into the main opening of the fistula, if more than one exists, and the emulsion is slowly injected. Should there be an internal opening, the index finger of the hand not manipulating the syringe is passed into the rectum and made to close the internal opening of the fistula so as to prevent entrance of the paste into the bowel and to aid in forcing it into all the diverticula and tortuous tracts. Success will depend much on the technic and thoroughness with which the procedure is carried out. This paste may and has been used to close deep and overlooked tracts after an unsuccessful surgical operation. It is also valuable in complex cases in which there are a number of ramifications and a communication with the bowel. Surgery leaves scars and irregularities, sometimes making it hard to keep the parts clean.

DISCUSSION.

DR. H. R. ALLEN, Indianapolis: I believe this method of injection of bismuth paste can be used extensively in orthopedic work, particularly in Pott's disease, abscesses, etc. After the paste is used, if one will make an *x*-ray examination, it will open his eyes with regard to the ramifications of the abscess. In surgical procedures we do not always effect a cure because we overlook the ramifications or diverticula of abscesses.

DR. J. H. STEALY, Freeport, Ill.: Dr. Pennington did not mention whether he considered it necessary to clean out the fistulous tract before injecting the paste. I have noticed that fistulous tracts will close after one or two injections, the patients thinking they are cured, but return in from a week to three months, with the same fistulous tracts open.

DR. GEORGE B. EVANS, Columbus, Ohio: I think it is essential to clean out these fistulous tracts before injecting the paste. I believe a large percentage of failures in treating fistulas surgically are due to careless and to indifferent postoperative work.

DR. J. R. PENNINGTON: I have paid no attention to cleaning out the fistulous tract, although the field is rendered as clean as possible, as well as the syringe that is used in making the injections.

(*To be continued.*)

IDAHO STATE MEDICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Boise, Oct. 8-9, 1908.

(*Continued from page 1535.*)

Resolutions on Public Health.

In the matter of public health the following resolutions were presented and adopted:

Resolved: By the Idaho State Medical Association, that it heartily recommends to the Congress of the United States the passage of such legislation as is intended to increase the public health duties and the efficiency of the Public Health and Marine-Hospital Service of the United States. To this end this association believes the powers of the service should be increased; that provisions should be made for the retirement under pay of the commissioned officers of the service, and that the salaries of said officers should be made commensurate with the Medical Corps of the U. S. Army.

Resolved: That we commend the effort made and designed to secure greater efficiency in all national public health agencies, and to this end we advocate at the earliest date practical the organization of all existing national public health agencies into a single national health department, with such improved status and increased powers as will give the Federal Government the strongest possible control over all public health interests not now effectively conserved by the respective states. Be it further

Resolved: That the secretary shall send a copy of these resolutions to the chairman of the committee on interstate and foreign commerce of the House of Representatives; to the committee on national quarantine of the U. S. Senate, and to the senators and representatives of this state in Congress.

The Social Evil and Effective Methods of Dealing With It.

DR. C. L. DUTTON, Meridian: Child-labor, methods of factory employment, the wages of female clerks, and our divorce and matrimonial regulations are all factors in the social evil.

Every case of venereal disease should be reported, for publicity. As family physicians we are in a position to educate young people and their parents in regard to this evil. Every father should demand that the young man who asks for his daughter be physically clean. Boys and girls must be properly educated and advised during the receptive period of adolescence. This is the duty of the parents, but it is the physician's duty to see that the parents are properly instructed. I believe that many a life tragedy originates with the misunderstanding of the boy or girl at period of adolescence.

DISCUSSION.

DR. J. W. GUE, Caldwell: Medical examinations of prostitutes and regulation of these people are almost impossible while our laws will not allow us even to recognize the existence of prostitution, but prohibition, in my opinion, can be made fairly complete.

DR. T. D. TUTTLE, Billings, Mont.: Before we attempt to educate the people, the weaklings of the race should be properly treated, for example, those with well-known diseased conditions of the eyes, ears, nose and throat, then we are in a position to try to educate the people, and we will come nearer controlling prostitution and its evil consequences. The parents should be educated as they are best fitted to instruct their children. Prostitution is a condition which can not be prohibited.

Suggestive Therapy in the Early Months of Pregnancy.

DR. C. N. SUTTNER, Walla Walla, Wash.: Most of these patients are more sick morally than physically, and the utmost tact and skill is required in their treatment. Suggestive treatment is of great benefit in dispelling the horrors of motherhood, in relieving the psychoses of the early months of pregnancy, in leading many young prospective mothers away from the criminal abortionist, and from false ideals of married life, and in the relief of vomiting of pregnancy. We have continually to dissipate prejudices, tone up patients by encouragement, often by seriousness and pleasantry. When we dissipate fear, sorrow and apprehension from the heart of the pregnant woman, and substitute a smile we do more toward helping her bear the ordeals of motherhood than the perfunctory distribution of medicines. The inculcation of fear (bluff) may work in a few cases, yet a vast majority yield more to kindness, gentleness and persuasion.

DISCUSSION.

DR. JACOB PRINZING, Ontario, Ore.: Diminution in the birth rate is not due to the women themselves, but to the conditions of society. Our present-day society compels men and women to subdue their passions during the best part of their lives, their sexual lives. Young men and women are not allowed to marry until too late in life. Parents are prone to discourage the young woman from thoughts of matrimony, and when she does marry the young wife's mother is apt to advise against having children. In these homes one will nearly always find a book, full of things to scare and discourage a prospective mother. The medical profession should publish a book of information and advice for young women. The physician should encourage and educate the parents, and the parents should teach their children. If we educate the parents we will have no trouble with the girls.

DR. H. W. COE, Portland, Ore.: In matters of this kind I approve of calling a spade a spade. There seems to be something in a man that under certain conditions will prompt him to do an abortion. There is often a strong temptation to help a woman out of her trouble. If we give these patients good advice and utilize a little psychic influence, many unborn infants can be saved to useful lives. Insanity in the pregnant woman is the most promising type of insanity to treat, but it should not be treated as are other forms of insanity. These women should not be sent to an asylum. They will recover shortly.

DR. J. J. HAMILTON, Caldwell: It is a most abominable fact that society women, even workers in the church, will go to physicians with pitiful tales of woe, and ask them to do abortions.

DR. J. W. GUE, Caldwell: One trouble is that the people know who these professional abortionists are, and not only consult them, but protect them from legal prosecution. It it difficult to convict a professional abortionist. He does these things daily and is never prosecuted unless a patient dies, even then it is hard to convict. But let the family physician be tempted to do these things and he gets into all kinds of trouble.

DR. C. N. SUTTNER: The responsibility for a great moral educational work is on us. The minister is afraid to speak on account of the effect it might have on society and—the collection. The old Mosaic law is no longer taught. We physicians must do this. A book should be written by members of the profession, the right kind of a book, but who would write it without doing so to advertise himself more than to benefit womankind?

Clean Milk.

PROF. H. T. FRENCH, Idaho State University: In every civilized country of the world milk holds an important place in the dietary of its inhabitants, and to-day much is being done to render milk more wholesome and attractive by compelling people to keep it clean. While clean milk is most wholesome, no food material is so easily contaminated. Epidemics of disease can be traced to the milk supply. Much has been done to prevent the use of preservatives and to require certain standards of excellence, but comparatively little effort has been made to render milk clean. By clean milk is meant not only milk free from dirt, but also free from injurious forms of bacteria. The number and variety of bacteria which milk contains is a good measure of the cleanliness and care with which the milk has been handled. To bring about better conditions along these lines requires the enactment of a dairy inspection law which shall provide for a dairy and pure food inspector who shall be required to inspect all dairies and farms where milk is produced for market, and the observance of the following conditions should be insisted on: (1) Animals free from disease; (2) clean stables for the cows; (3) no litter or feed to be handled during milking; (4) hay or feed not to be stored above the cows, and cobwebs and other loose dirt not allowed to accumulate on timbers above cows; (5) open milking sheds, all freely whitewashed; (6) cows to be kept clean; (7) udder and adjacent parts to be well cleansed before milking; (8) hands of milkers to be thoroughly washed, and milkers to wear clean clothes; (9) no person in any way sick allowed to handle milk; (10) milk cooled immediately after drawing and kept cool; (11) milk cans or buckets never washed or rinsed in ditch water unless it has been boiled; (12) all milk utensils scalded with boiling water or live steam; (13) after cleansing, milk pails and cans to be kept in sunlight.

Food Inspection and Its Benefits to the People.

HON. J. R. FIELDS, State Dairy, Food and Oil Commissioner: No unprejudiced person now doubts the wisdom of pure food legislation, but only those intimately connected with the work realize the far-reaching benefits to the people of this pure food campaign. Six years ago preserves, jellies and jams were largely adulterated and misbranded. Canned corn, peas and beans were artificially colored and preserved. Meats were embalmed with chemicals, and misbranded, and the local butcher used chemical preservatives. The milkman used freezine. Candies, syrups and strained honey were largely glucose. Whiskey seldom contained real whiskey. Vinegars were misbranded, and the spices were but a semblance of the real thing. To-day the conditions are changed. The prepared canned foods are made from pure goods, and if cheap ingredients are used the package is labeled honestly. Milk and meats are free from chemical preservatives, and other food products are correctly and properly labeled. The benefits from these changes are hardly realized by the bulk of the people, as they are by the educated physician. However, there is still much to be done along this line, and the pure food workers need the advice and cooperation of the organized medical profession. The degree of harmfulness or the harmlessness of certain chemical preservatives must be worked out by the physician. Further sanitary legislation is necessary giving the pure food department authority over the sanitary conditions of slaughter houses and other places where food is prepared, stored or served.

DISCUSSION ON PAPERS OF PROF. FRENCH AND MR. FIELDS.

DR. R. J. CLUEN, Des Moines, Iowa: My experience as dairy inspector has demonstrated to me the importance of this subject. The habit of using formaldehyd for preserving milk is pernicious. Country stables are notorious for their filth. I have found freezine used extensively to save spoiling milk. Filthy slaughter houses should be regulated by legislation, and I suggest that the association take steps to further the securing of such legislation.

DR. C. A. SMITH, Seattle, Wash.: The Seattle board of health in handling the milk supply appointed a milk commission and succeeded in bettering the supply considerably, but even by putting a premium on certified milk the board succeeded in getting only one man to comply with the full requirements. Later the commission refused to receive milk from country dairies that would not stand inspection, and this latter move caused a marked improvement in the death rate among children. It is necessary in these cases to bring force to bear on dairymen to compel them to comply with the sanitary regulations.

Gastric Surgery of the Present Day.

DR. R. C. COFFEY, Portland: Prior to two years ago the technic of gastrointestinal surgery had made rapid improvement, with corresponding lowering of mortality and increase of beneficial results. But during the past two years no changes of importance have been made in the technic. The introduction and use of the Fowler position has materially lessened the death rate, particularly from the complicating pneumonias. I think that we have reached the age of minimum mortality for gastric surgery until methods of diagnosis are further improved and the surgeon sees many of these gastric cases earlier, or is better able to differentiate his cases.

DISCUSSION.

DR. E. VAN NOTE, Boise: About 50 per cent. of cases of gastric ulcer do not require operation; so we see the great value to the patient of an early and correct diagnosis.

DR. STEWART: Gastroenterostomy is now seldom done except for pyloric obstruction. Adhesions, ulcers and dilatation may give same symptoms and require gastroenterostomy, but obstruction is the main indication for this operation. In malignant disease of stomach, operation gives temporary relief.

DR. R. C. COFFEY: With improved methods of diagnosis there will be less operating for non-malignant and more operating for malignant disease of the stomach. Malignant cases should be diagnosed early. It is inexcusable for a physician to treat patients for months for indigestion, until with loss of weight, etc., there is no doubt left but that the condition is malignant and it is too late to operate. I believe that there can be no further improvement of the technic of gastric surgery. The improvement must come in diagnosis. The general practitioner should be able to diagnose stomach disease early, and in every case of stomach trouble in which he has not obtained results he should call in an internist for help in arriving at a diagnosis, and if there is still any doubt the patient should be referred at once to a competent surgeon for his opinion. The surgeon knows more about cancer, as he sees more of these cases. In all doubtful cases an exploratory incision is always in order and is harmless.

Intestinal Putrefaction and Its Relation to Indicanuria.

DR. RAY W. MATSON, Portland: Our knowledge of problems of metabolism is yet in its infancy. We find in the intestines ideal conditions for bacterial growth, but physiologists have failed to account for the presence of these organisms. While bacterial invasion is unavoidable, fortunately the predominating types are saprophytic and nonpathologic. Intestinal putrefaction with indol production has been demonstrated to be due to presence of *Bacillus coli communis* acting on the products of anaërobic activity or on the products of normal proteolytic digestion. Absorption of indol is followed by the appearance of indican in the urine. Holland's method of determining urinary indican is as foihydrochloric acid; then add 3 grains of sodium perborate and lows: To 5 c.c. of urine add an equal amount of concentrated gently agitate. If indican is present the urine deepens in color, and if the amount of indican be large it turns faintly blue. To concentrate the color add 2 c.c. of chloroform and shake gently for two minutes. On standing the chloroform separates at the bottom as layers varying in depth of blueness with proportion of indican present. In the presence of a positive indican reaction we have a reliable index of absorption of putrefactive products, but a negative reaction does not signify absence of indol absorption. The conditions favoring putrefaction are overeating and faulty innervation, leading to disturbances of motor and secretory functions. Overeating is particularly pernicious. Manifestations of absorption of putrefactive products are many, such as loss of weight, premature senility, easily fatigued, and physical prostration and inaptitude for work. Abdominal distension and flatulence, and constipation or diarrhea may exist. Obstruction of bowels causes intense reaction, and the higher up the obstruction the greater the indicanuria. The nervous system is particularly susceptible to poison. Neurasthenia, mental dullness, drowsiness, wakefulness, rheumatic or neuralgic pains, headache. The physical phenomena are depression, melancholia, dread, fear and even delusion, also migraine. Some forms of insanity are thus formed.

DISCUSSION.

DR. J. L. STEWART, Boise: Intestinal putrefaction seems to be an important factor in the production of many conditions, especially of the nervous system. Neurasthenia, migraine, and particularly epilepsy, may be caused by autointoxication, and also obscure lesions of the muscular system and heart. I do not test urine for indican so often as I should, and I think this is a common mistake of the profession. The relation of intestinal putrefaction to acute melancholia and insanity is evident, and the secondary anemias of young girls are undoubtedly due to this cause. Overeating is unquestionably an important cause of putrefaction, and it is a common practice among Americans. It is a well-known fact that forced feeding of tuberculous patients causes intestinal putrefaction, and the urine of these patients should be frequently examined to determine this fact. The indican test is a doubtful one in intestinal obstruction. We have other, better and easier tests by which we may recognize the condition.

DR. F. GILLESPIE: Intestinal putrefaction is a frequent cause of disease of the nervous system. Indicanuria is found in nearly all cases of melancholia and neurasthenia, particularly melancholia. The urine should be examined in all cases and proper eliminative treatment used.

DR. L. P. MCCALLA, Boise: This condition is more common than is thought. It is a very frequent cause of disease in children, and we often meet men and women who overeat. I think that many nervous breakdowns are due to intestinal putrefaction, and are preventable. Ptomain poisons are probably the cause of many heat prostrations. Postoperative temperature is frequently due to this condition. I have used phosphate of soda in neurasthenic cases with marked benefit, due to its cleansing effect on bowels.

DR. J. M. TAYLOR, Boise: I have always had the impression that intestinal putrefaction was due to an imperfect digestion, and that the symptoms produced were due to absorption of improperly digested food products. Many patients seem to be without clinical symptoms.

DR. R. W. MATSON: It is just as important to make a routine practice of examining for indican as for albumin or sugar. Examinations of stools are difficult and require much time. I believe that there is an absolute relation between migraine and indicanuria. Cylindroids and a few casts are frequently found in connection with indicanuria. Overeating is a pernicious habit and is undoubtedly the cause of many ills. I intentionally avoided treatment in my paper, but by cleansing out bowels and restricting the diet we may starve the putrefactive bacteria and relieve the symptoms. Authorities differ concerning the effects of normal digestion on putrefaction. Some people can not take starches or sugars without producing intestinal putrefaction. All my tests were made by the method given in paper.

(To be continued.)

Medicolegal

What Constitutes Practicing Medicine, Etc., Under New California Law.

The Supreme Court of California construes, in the case entitled Ex parte Greenall, the act of that state of March 14, 1907, with reference to what constitutes the "practice" of medicine, etc., under it. The act is entitled "An act for the regulation of the practice of medicine and surgery, osteopathy, and other systems or modes of treating the sick or afflicted, in the state of California, and for the appointment of a board of medical examiners in the matter of said regulation."

The court says that the 1907 act provides: "Any person who shall practice or attempt to practice or advertise or hold himself out as practicing medicine or surgery, osteopathy, or any other system or mode of treating the sick or afflicted, in this state, without having, at the time of so doing, a valid, unrevoked certificate, as provided in this act, shall be guilty of a misdemeanor." The act nowhere states, as did the act of 1901, which was limited to a regulation of the practice of "medicine and surgery," what is meant by the term "practice" as used therein.

The act of 1901, after providing that "any person practicing medicine or surgery" without a license should be deemed guilty of a misdemeanor, provided, in Section 16: "The following persons shall be deemed as practicing medicine or surgery within the meaning of this act: 1. Those who profess to be, or hold themselves out as being, engaged as doctors, physicians or surgeons in the treatment of disease, injury or deformity of human beings. 2. Those who, for pecuniary or valuable consideration, shall prescribe medicine, magnetism or electricity in the treatment of disease, injury or deformity of human beings. 3. Those who, for pecuniary or valuable consideration, shall employ surgical or medical means or appliances for the treatment of disease, injury or deformity of human beings. . . . 4. Those who, for a pecuniary or valuable consideration prescribe or use any drug or medicine, appliance or medical or surgical treatment, or perform any operation for the relief or cure of any bodily injury or disease." There was thus given by that act to the term "practicing medicine or surgery" a definite meaning, corresponding substantially with the popular understanding of the term. When we say that one is practicing medicine or surgery or osteopathy, we ordinarily mean that he is engaged in that line of work as a business, holding himself out as being so engaged, or for a consideration treating those who will accept his professional services, and we would not apply the term to one who incidentally and gratuitously suggests or puts into operation some method of treatment in the case of one who is "sick or afflicted."

The court is satisfied that the term "practice" in the act of 1907 should not be given any broader meaning than it had in the act of 1901. One who within this meaning "practices" medicine or surgery or osteopathy, or any other recognized mode of treatment of the sick, without a certificate, violates the provisions of the act. It might be sufficient in the complaint to charge simply that one had practiced medicine, or osteopathy, or chiropractics, without such certificate. In such an allegation, the word "practice" would, in view of the accepted meaning it is given when used in such connection, reasonably bear no other construction than the one the court has described, and so construed would show an offense.

But the complaint in the case before the court contained no such allegation. The allegation was simply that the defendant did willfully and unlawfully "treat the sick or afflicted" without having at the time a valid unrevoked certificate as required by the act, the words "by practicing the system or mode known as 'chiropractic,'" being simply descriptive of the method by which he treated the sick. As thus used, the word "practicing" could not reasonably be given the meaning the court has described, but was synonymous with the word "using."

The court was informed in the briefs that the word "chiropractic" meant a treatment somewhat analogous to that of osteopathy, the removal of the cause of disease without the use of drugs or any other means except the adjustment of the vertebræ of the spine by manipulating them with the hand. If this was correct, the complaint in this case simply charged that the defendant used this method in "treating" the sick or afflicted, without having any certificate under the act, and the allegations of the complaint would be fully sustained by proof that he had incidentally and gratuitously attempted to administer aid to one who was sick or afflicted by the use of this method. It might as well be contended that a complaint simply charging that one treated a sick person by administering medicine, without having a certificate, would state a public offense under this act. To bring a person within the provisions of the act, it must appear that he practices, or attempts to practice, medicine, etc., as a business or calling, or advertises or holds himself out as so doing, and, as the court has said above, an allegation that one "practiced medicine" or surgery, etc., might show this.

No Fixed Percentage of Alcohol That May Be Used in Medicinal Preparations.

In a ruling of Oct. 3, 1908, Robert Williams, Jr., Acting Commissioner of Internal Revenue, states that there is no fixed percentage of alcohol which may be used in the manufacture of alcoholic medicinal compounds without rendering the manufacturer liable to special tax as rectifier, the ruling being that such alcohol as is used must be so medicated as to render it unsuitable for use as a beverage, and only such amount may be used as is necessary to extract the properties of the ingredients, or as a preservative or solvent.

Having a Diploma Does Not Make a Licensed Physician.

The Supreme Court of Alabama says, in McAllister vs. State, where it was averred that a certain person was a licensed physician, that the fact that the physician had a diploma did not prove it, and to allow him to testify that he had such a diploma was incompetent and illegal evidence. Furthermore, the diploma, if of any value as evidence, should have been produced, and hearsay evidence of its contents was inadmissible.

Contracts and Compensation for Services.

The Supreme Court of New York, Appellate Division, First Department, says that the case of Burke vs. Mulgrew was an action by a physician against the estate of his father-in-law, in which the physician claimed that he was entitled to compensation for loss sustained through absence from his office in addition to compensation for services rendered. But a contract to pay more than the actual value of the services rendered is quite unusual. Testimony, however, that the services of a particular physician were desired at such place and under such circumstances that compensation for the services would not be adequate remuneration for the loss of time or business would tend to render probable testimony that an agreement was made to compensate the physician for both services and necessary loss of time or business; but such testimony should not be construed as contemplating compensation for the full time or loss of business and for the services as well, for the former would embrace the latter. A construction which would give the physician double compensation should not be given to the contract, unless the language employed was susceptible of no other construction, and in that event the extraordinary character of the promise would render the testimony improbable, and require that it be well supported by facts and circumstances to sustain a recovery thereon.

The court also holds that it was error to exclude evidence designed to show that the family relations were such in this case that the physician and his family frequently visited at the residence of his father-in-law and accepted his hospitality during part of the time for which he charged for his services. This evidence was competent, as tending to show that the calls for which the physician was charging were materially prolonged by visiting, for which his father-in-law was not properly chargeable, and that there was an overcharge for time.

Evidence with respect to the physician's annual income prior to the date he began rendering the services in question was doubtless proper as tending to show the value of his time, which might be considered by the jury in estimating the com-

pensation to be made for his services and time when absent from the city; but on no theory of the case does the court think evidence admissible of the physician's receipts from his practice during the period of the rendition of these services, showing a falling off in business which might have been due to other causes.

The physician being an incompetent witness on account of the death of the patient, there was difficulty, of course, in showing the services actually rendered while traveling; but on the admissions and declarations made by the patient with respect thereto the physician would be entitled to go to the jury on the claim that he had properly prescribed for and administered to the patient during the periods in question, and to ask the jury to so find.

Physical Inability to Work.

The Supreme Court of Nebraska says, in the case of Keith vs. Chicago, Burlington and Quincy Railroad Company, that railway employés only were permitted to join the relief department of the defendant company, an institution organized to pay disability benefits to members. The contract for benefits provided: "The word 'disability' shall be held to mean physical inability to work." The court holds that the words "physical inability to work" mean inability to perform such labor as the injured member was engaged in at the time of his injury, or similar labor which would enable him to earn wages equally as remunerative. Under the provisions of such a contract, if an injured member of the relief department recovers so that he is able to perform such work as is contemplated in the contract, or similar work equally as desirable and remunerative, then the obligation of the defendant to pay disability benefits ceases. But recovery sufficient to enable him to earn much smaller wages at some other employment, or employment procured through the charity or indulgence of friends or relatives, when, in fact, he has not recovered from his disabilities, is insufficient to release the defendant.

Dying Declarations in Abortion Cases.

The Supreme Court of Oregon says, in the case of State vs. Fuller, that the dying declarations of a woman on whom an abortion had been performed were not originally admissible in evidence, on the ground that her death was not an essential ingredient of the offense, which was complete without it; but when her demise, as a result of a premature delivery produced by another person, is made by statute an indispensable constituent of the crime as charged, her dying declarations are receivable in evidence. To exclude that part of the dying declarations of a pregnant woman that tend to prove that the means employed by another person to procure her miscarriage were unnecessary to preserve her life might render convictions in such cases impossible; and, in view of the consequences thus assumed, the court believes that necessity demands that her declarations, tending to establish such constituent of the accusation, are competent evidence.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

October 24.

1 *Alcoholic Psychoses. Chronic Alcoholic Delirium (Korsakoff's Psychosis.) S. E. Jelliffe, New York.
2 Diagnosis of Erythematous and Exanthematous Rashes. C. A. Kinch, New York.
3 *Summary of Results Obtained by X-ray Treatment of Exophthalmic Goiter. G. E. Pfahler, Philadelphia.
4 Case of Squamous-Celled Epithelioma. W. M. Lewis, Baltimore.
5 *Diagnostic Value of Perverted Secretion of Hydrochloric Acid by the Mucous Membrane of the Stomach. G. Chambers, Toronto, Can.
6 Hyperemesis During the Gravid State in Two Successive Pregnancies. H. Grad, New York.
7 Need and Value of Health Inspection Work. L. A. Jones, North Adams, Mass.

1. **Alcoholic Psychoses.**—Jelliffe, in an exhaustive article, discusses the so-called alcoholic paranoias, and the mental disturbance which is associated with a more or less marked degree of polyneuritis, the so-called polyneuritic psychosis or Korsakoff's psychosis. He summarizes the history of our knowledge on this subject, and quoting an account of the mental features from Starr, designates as incorrect the terming of the falsifications of memory "delusions." Science requires that when a symbol is used, the user should have a clearer and more thorough idea of what is meant. For this reason Jelliffe quotes fragments from descriptions by Korsakoff himself. He next describes in great detail the case of a chronic drinker who has frequently been drunk and who entered the hospital unable to walk, with the signs of a multiple neuritis and an active delirium associated with hallucinations of sight and hearing. The mental conditions in this case are striking: 1. In the first place there was a definite disturbance of the man's power of attention. He was not well oriented as to his surroundings, as to time, as to place, although this has improved somewhat. 2. He further showed marked memory defects; a retrograde amnesia which stretches back several months. 3. To make up for these obvious memory defects it was noted that the patient attempted to fill up the gaps by telling of things that he had done which were manifestly impossible. Jelliffe then discusses the pathology at length, summarizing it as follows: A diffuse, severe, destructive process is at the foundation of Korsakoff's psychosis; such process involves the entire nervous system very irregularly, including the parenchyma, blood vessels, the fibers, with the frequent occurrence of small hemorrhagic foci. Such a process is not pathognomonic for Korsakoff's psychosis by any means; certainly, in the acute stages, the clinical as well as the pathologic picture is not distinct from other acute intoxications. However, study may show that the chronic processes are characterized by types of localization not found in other mental disorders, but at best the research involved is time consuming and extremely difficult.

From another case Jelliffe discusses the neuropathologic changes and differentiates the various clinical forms. The treatment differs but little from that of multiple neuritis, but overfeeding is strongly insisted on. Little progress has yet been made in training the memory, so far as the acute stages are concerned. The patient's grasp of things is so slight and so evanescent that applied pedagogy will bring its own reward in loss of time and effort; but later in the course of the affection a true scientific pedagogy may need to be called on, especially if the defects observed are more or less localized. If it is found, for instance, that the patient's optical memories seem to have borne the brunt of the storm and have been left with reduced capacity, it may be desirable to apply the principles of a constructive education to other less affected receptors or their connections. Finally, Jelliffe insists in later stages on out-door occupation, and urges great care not to overdo things in therapeutic efforts. He warns against the use of tonics that contain alcoholics in any form, and particularly condemns peruna and its ilk, which he has known to be responsible for the development of Korsakoff's psychosis.

3. **X-Rays and Exophthalmic Goiter.**—Pfahler analyzes the reported results of the *x*-ray treatment of exophthalmic goiter, and says that at least 51 cases in which the Roentgen rays were used have been recorded in the literature. Of this number, in 42 cases there were good results; in nine patients there was little or no improvement. He draws the following conclusions: 1. Decided improvement may be expected in about 75 per cent. of cases. 2. This improvement consists of an increase in weight and strength, and gradual disappearance of the Basedow symptoms. 3. Some improvement should be noticed within a month, and after from 6 to 12 treatments. 4. When this treatment is properly given there appears to be no danger, and Pfahler can see no objections to recommending this trial of a month in all cases.

5. **Perverted Secretion of Hydrochloric Acid.**—Chambers cites certain physiologic facts bearing on this subject and discusses them. He then briefly states observations on some diseases of the stomach usually characterized by perverted se-

cretion of gastric juice. With regard to carcinoma he holds that the absence of free hydrochloric acid in gastric contents or better, diminished secretion of gastric juice, or of hydrochloric acid, is a valuable symptom, when associated with other well-known signs in the diagnosis of gastric cancer. Alone, it is of little value, as it is also a sign of acute gastritis, chronic catarrh of the stomach, pernicious anemia and other affections. Acid gastritis is a chronic disease characterized by excess of mucus and of hydrochloric acid in gastric contents. The total acidity is high (70 to 120), of which free hydrochloric acid is from 20 to 60. When carcinoma complicates acid gastritis or gastric ulcer, free hydrochloric acid may be present in advanced stages of the disease. This is particularly true of cancer engrafted on a pyloric ulcer. Achylia gastrica is a disease characterized by absence of free as well as of combined hydrochloric acid in gastric contents. It may be a primary neurosis or secondary to organic disease of the gastric mucosa. In two cases administration of dilute hydrochloric acid checked the diarrhea. This suggests a use of hydrochloric acid in the diagnosis of achylia. Hydrochloric acid is a useful agent in the treatment of diarrhea in cases of pernicious anemia and of severe infectious diseases in which achylia may be present. It is difficult to explain its action.

Medical Record, New York.

October 24.

8 *Thoracic Perioste-Edema of Angioneurotic Origin. H. Stern, New York.
9 *Features of the Present Crusade Against Tuberculosis in New York City. N. G. Seymour, New York.
10 *Eupyrexia. C. Calleja, Madrid, Spain.
11 Early Medical Schools and Legal Regulation. J. J. Walsh, New York.
12 Interpretation of Blood Examinations. I. S. Wile, New York.
13 Syphilitic Prophylaxis by the Use of Calomel Ointment. A. L. Wolbarst, New York.
14 *New Simple and Ready Method of Dropping Ether from the Original Can. J. E. Lumbard, New York.

8. **Thoracic Perioste-edema.**—Stern discusses five cases of thoracic perioste-edema of angioneurotic origin. He concludes that this condition occurs much more frequently than is generally supposed; it is closely related to the acute, circumscribed, superficial edema, with which it may be associated. It may be the external manifestation of periosteal swellings on the inner side of the thorax, or the visible evidence of possible angioneurotic edemas of the mucosa of the respiratory tract disturbing the thoracic equilibrium. If rightly interpreted it will always prove of diagnostic aid. It appears oftener in women than in men, and seems to stand in some connection with the catamenia. It requires no treatment in most cases.

9. **The Tuberculosis Crusade.**—Seymour describes the tuberculosis crusade as conducted in New York City, and calls attention to the fact that whereas in New York City the authorities are dealing with a problem of tremendous size and vast civic importance, no community, however small or however ideally situated, is wholly free from the universal scourge of tuberculosis; and however few and isolated the cases, each is a danger to that community. From a single such neglected spark may spread a vast conflagration.

10. **Eupyrexia.**—By this term Calleja means a slight fever in the pretuberculous stage, which he looks on as an attempt on the part of the organism to combat tuberculous infection. Its two factors are: 1, A deficiency of the constitutive oxygen of the cells of the body, which he terms hypoxygenia; and, 2, a superabundant proliferation in the body of the saprophytic tuberculous bacteria, which he calls Ferran's bacilli. Primary hypoxygenia is a general asthenia due to imperfect breathing and an insufficient intake of oxygen. Secondary hypoxygenia may be either general or local; the former is at times caused by chronic infections like lues or chronic intoxications like alcoholism, sometimes by primary anemia resulting from poor alimentation, and also it may be produced by a dyscrasia, especially when the individuals are narrow chested. Local hypoxygenia may be produced by traumatism and also by an idiosyncrasy. There are five degrees of pretuberculous affections; neuroses, hyperemias, fevers, inflammation and granulations, of which the first four may be preventive processes of the pretuberculous granulations, and may be their curative process once they have appeared. Eupyrexia is an important and frequent disease, especially in young people. Calleja describes four forms. We must respect the fever, he says, considering all antithermics contraindicated and we must not attack Ferran's bacilli, because we should thus unarm Nature of most valuable therapeutic resource. Our first aim must be to prevent hypoxygenia by pure air which will help the spontaneous curative process of eupyrexia.

14. **The Dropping of Ether.**—Lumbard suggests cutting through the soft metal cap of the ether can, about four-fifths round, so that the cap can be bent back without fracture. A small pledget of absorbent cotton shaped to a wick is then inserted, and the flap turned down on it, thus forming a dropper. After use, the flap can be turned back and a cork inserted in the can.

Boston Medical and Surgical Journal.

October 22.

15 *Antituberculosis Program: Coordination of Preventive Measures. R. W. Philip, Edinburgh.
16 *Bursitis. Subacromialis, or Periarthritis of the Shoulder Joint. (Subdeltoid Bursitis.) (To be continued). E. A. Codman, Boston.
17 Serum Treatment of Epidemic Cerebrospinal Meningitis with Report of Twenty-two Cases. F. T. Fulton, Providence, R. I.
18 Pyonephrosis and Renal Calculi in a Pregnant Woman, Induced Labor, Nephrectomy, Recovery. J. B. Wheeler, Burlington, Vt.

15. **Antituberculosis Program.**—Philip comments on the history of the combat against tuberculosis prior to the discovery of the tubercle bacillus, and describes its progress since that time. It is essentially a social problem. In children he is every day more impressed with the frequency of tuberculous lesions, not necessarily pronounced pulmonary or abdominal disease, but slighter forms of glandular affections which often escape notice. Observation leads him to the conclusion that infection may occur by way of the mucous passages at any point from the oral and nasal orifices downward. He next discusses tuberculosis at the school age, from two series of observations based, respectively, on the school children presenting themselves at the Royal Victoria Dispensary for Consumption, Edinburgh (11.5 per cent. of all cases), and his personal examination of groups of children in various public schools of Edinburgh (30 per cent. of children examined), and concludes that tuberculosis is vastly more frequent than is usually supposed. He next discusses tuberculosis nests. The futility of much-existing endeavor is due to the determination of effort too largely toward the individual patient, rather than to the disease as a social malady. A comprehensive program is necessary, including notification, then the dispensary with its group of co-ordinated measures—domiciliary investigation, relations with the sanatorium, hospitals, open-air camps, etc. He goes at length into this subject. An interesting feature is a series of charts showing the mortality curves from pulmonary tuberculosis for London and Edinburgh for the decades beginning 1886 and 1896. While the fall in the later decade in both places is remarkable, he attributes its pronounced character in Edinburgh, especially in the latter years of the second decade, to the development of the complete organization of antituberculosis measures.

16. **Bursitis Subacromialis.**—This paper is supplementary to a paper on Stiff and Painful Shoulders (*Boston Medical and Surgical Journal*, May 31, 1906, and *Ohio State Medical Journal*, Aug. 15, 1906) by the same author. He has now complete notes on seventy-five cases of lesions on subdeltoid or subacromial bursæ, for they are one and the same thing. Subacromial bursa is really the better name, for in abduction the whole bursa is subacromial. The subdeltoid bursa is the portion which in adduction lies beyond the edge of the acromion under the fibers of the deltoid. The relative size of the two portions, will, of course, vary with the position of the arm, for the tuberosity moves in and out, carrying the floor of the bursa with it. He describes with illustrations the anatomy of the joint and the mode of demonstrating the bursa on the cadaver, and discusses the mechanics of the motions of the humerus.

Lancet-Clinic, Cincinnati.

October 24.

19 Pathology of Typhoid Fever. L. G. Heyn, Cincinnati.
20 Vitiligo. M. L. Heidingsfeld, Cincinnati.
21 Obscure Fractures Discovered by Roentgen-Ray Examination. S. Lange, Cincinnati.
22 Regurgitation a Symptom of Gallstones, or Rather of Cholecystitis. B. Holmes, Chicago.

Surgery, Gynecology and Obstetrics, Chicago.

September.

23 *Further Aid in Diagnosis of Esophageal Stenosis. M. G. Seelig, St. Louis.
24 Pathology and Cystoscopy of Cystitis Cystica. H. L. Kretschmer, Chicago.
25 Clinical Study of Hypernephroma, with Pathologic Reports. G. E. Beilby, Albany, N. Y.
26 *Criticism of the Treatment of Acute Suppurative Infections by Passive Hyperemia and Cupping. L. Wrede, Königsberg, Germany.
27 Acute Postoperative Dilatation of the Stomach. C. A. McWilliams, New York.
28 *Diffuse Peritonitis in Women. E. McDonald, New York.
29 Relation of the Lesion in Appendicitis to the Leucocyte Count. R. H. Fowler, New York.
30 *Surgical Treatment of Anorectal Imperforation in the New-Born. W. M. Mastin, Mobile, Ala.
31 Paradox Position of the Pelvis in Scoliosis. A. Steindler, Chicago.
32 Primary Sarcoma of the Liver. V. B. Knott, Sioux City, Iowa.
33 Fracture of the Eminentia Capitata. C. P. Flint, New York.
34 Cyst of the Thyreoglossal Duct. J. F. Hultgen, Chicago.
35 A Healing Intussusception in Case of Multiple Polypi of the Intestine. C. A. Parker, Chicago.
36 Subacute Perforation of the Stomach. M. Kahn, Leadville, Colo.
37 Acute Cholecystitis in the Second Week of Typhoid. Cholecystostomy with Recovery of Pure Culture of Typhoid Bacilli from Contents of Gall Bladder. J. M. Mason, Birmingham, Ala.
38 *Practical Suggestion in Reduction of Dorsal Dislocation of the Hip. J. H. Shephard, Cœur D'Alene, Idaho.

23. **Diagnosis of Esophageal Stenosis.**—Seelig describes the case of a child 9 years old, with complete dysphagia and consequent emaciation, in which the diagnosis lay between hysteria of the monosymptomatic type, stricture, and diverticulum of the esophagus. Tests were made with bismuth emulsion, the passage of the bougie, and finally by causing the child to swallow a very fine gold chain about 2 feet long and as thick as ordinary wrapping twine. Enough of the chain was swallowed to fill the sack. In the *x*-ray picture the chain is seen distinctly coursing down in practically a straight line from the first cervical vertebra, and ending in a mass well to the left of the middle line. The diagnosis of a diverticulum was in part justified on external esophagotomy, for while there was a marked tight stenosis the left wall above it was diverticulated to a marked degree. Seelig's object is to suggest a method of studying the esophagus with the *x*-ray without the difficulties inherent in the use of bismuth emulsion.

26. **Constriction Hyperemia in Acute Suppurative Infection.**—Wrede considers Bier's treatment of suppurative infections an empirically recommended agent, which shows unexplained contradictions, and recommends a critical consideration rather than uncontrolled enthusiasm on the subject. He takes up in detail the premises on which Bier founded his treatment, and challenges Bier's datum that the infections of the body are overcome by inflammation, whence augmentation of the inflammation is to be desired. Wrede has pointed out that inflammation is not the weapon of the body against the bacteria, but rather the phenomenon of the complete reaction of the body to the organism. Non-applicability in severe cases and the uncertainty of the results are the disadvantages which the principle of Bier's treatment from the outset carries in itself, while the contrary is true of the old treatment. The modern physician, since the importance of immunity has become known, has discarded the use of the icebag and other antiphlogistics in the treatment of acute purulent infections, and depends on bacteriology. The ground principles of the Bier treatment correspond to the conditions found in internal medicine. All inquiry points to the fact that the bactericidal strength of the congestion produced by Bier's method may not be of so much importance.

The edema relieves pain by correcting the isotonic difference between the products of inflammation and the tissues in which they lie, diluting the inflammatory toxin and rendering them partly innocuous. It also has an antitoxic and antibacterial effect. On the other hand, if too intense it constricts the small blood vessels. Further, it spreads the salutary inflammatory products. Moreover, there is great difference whether the edema occurs in an area covered by intact skin or in one that has been incised. In the former case it must be resorbed. During the "pause" in the Bier treatment, especially when the limb is elevated, absorption is quick, so that the body is suddenly flooded by the edema fluid which carries with it the soluble substances of the inflammatory process. The edema of passive hyperemia represents a solution of toxins, and these are thrown into the general circulation and affect the whole body; whether or not they produce the phenomena of disease, or are entirely destroyed and excreted, depends on the amount of the toxins, a factor we are not able to influence. This can not be regarded with indifference, for while a healthy and strong man may be able to take care of a large amount of toxin and seemed to suffer no ill effects from the high temperature, etc.—"the fever of passive hyperemia"—where, asks Wrede, do the nephritis, cardiac weakness, and all those conditions following in the course of infections, come from, unless from the resorption of toxins from the foci of infection? Bier, of late, makes use of incisions, but he underrates their value and importance. They must be large enough to afford all protection from resorption. Wrede says that whoever will observe severe cases treated by passive hyperemia without incision, will soon learn the value of incisions, and if he will subtract the influence of the incision from Bier's hyperemia procedure, he will probably become skeptical of passive hyperemia. In the surgical clinic of Königsberg, physicians are unconvinced that the new method has advantages, and have returned to the old method.

28. Abstracted in THE JOURNAL, Feb. 8, 1908, p. 477.

30. **Anorectal Imperforation in the New-Born.**—Mastin reviews the various operations that have been devised to remedy this defect, and gives a statistical estimate of them. He concludes that the most cursory examination of these statistics indicates at once the lessened mortality in all perineal operations over the abdominal or transperitoneal procedures. But when it is considered that a large proportion of the perineal operations are of the simplest character, whereas the colostomy cases usually comprise the gravest type of the malformation, and the operation is resorted to only after probably a long and unsuccessful perineal dissection with a shocked and exhausted child, it can be readily appreciated that the statistical results are more apparent than real. Nevertheless, considering these results, together with the knowledge that the rectum is entirely absent or inaccessible through a perineosacral incision in only about 10 per cent. of the cases, no surgeon of the present day would consider for a moment any other than the low route as the method of election, leaving the operation of inguinal colostomy to be applied in exceptional instances, or, at least, in weakened and septic infants in whom it is imperative to give exit to the pent-up meconium by the most expeditious and certain means. But, at the same time, he is not quite sure that inguinal colostomy may not have a somewhat broader field of application than merely as a *dernier ressort* in these cases, and it would appear that the present statistical data afford sufficient evidence in support of the assumption.

38. **Reduction of Dorsal Dislocation of the Hip.**—Shephard describes the following method of reducing dorsal dislocation of the hip with a view to overcoming the difficulty of exerting the necessary traction and at the same time practicing rotation, abduction and extension, as is necessary when making use of the untorn portion of the Y ligament as a fulcrum for forcing the head into place. With the patient lying on his back on the floor, completely anesthetized, an assistant knelt at the patient's left side, facing his feet, and by placing one hand on each of the iliac crests firmly held the pelvis to the floor. Shephard then knelt on his left knee at right angles to the patient and even with the pelvis, on his right side; with his left hand he took a firm hold of the patient's right knee and with his right hand caught the ankle; then flexed the thigh to right angles with the body, and the left leg a little more than a right angle with the thigh. He then placed his right thigh, about midway between his body and knee, under the flexed knee of the patient. By attempting to rise, Shephard was able to exert almost any amount of traction on the dislo-

cated leg that he desired. By throwing his body forward as he attempted to rise, he was able to get all the adduction of the thigh that was necessary. Thus he had traction and adduction to the required degree and his hands were still free to manipulate the leg in rotation, flexion or extension as was required. By exerting steady traction on the leg—and when one is in this position it is not tiresome to hold steady traction—he manipulated the leg, hunting for the rent in the capsule. In a very few moments he was gratified to feel the head slip through the rent in the capsule and over the rim of the acetabulum, and then by extension and external rotation, which can be done for several degrees while traction is still continued, reduction was complete.

Southern Medical Journal, Nashville, Tenn.

September.

39 *What We Should Know About Malaria. W. Krauss, Memphis.
40 Treatment of Exophthalmic Goiter. J. R. Wathen, Louisville, Ky.
41 Diagnosis of Sarcoma. W. A. Bryan, Nashville.
42 Total Extirpation of the Urinary Bladder. W. Kohlmann, New Orleans.
43 Diseased Maxillary Antrum. B. D. Sibley, Birmingham, Ala.
44 Leucocytes in Appendicitis. R. C. Turck, Jacksonville, Fla.
45 *Urinary Infections in Obstetrics. C. Tompkins, Richmond, Va.
46 Renal Tuberculosis. LeG. Guerry, Columbia, S. C.

39. **Malarial Disease.**—Krauss discusses malarial hemoglobinuria and says that if it were nothing but acute pernicious fever, it could not attack persons weeks after their return from the tropics, even to England, where malaria is not endemic. He details the mode of acquisition of malaria and the development of the plasmodial cycle, and says that there is much evidence to show that the residue of segmentation contains a plasma-soluble poison which causes the chill, fever and sweat, a specific poison needed to sensitize the red cells for invasion by the young merozoites. In the normal scheme of defense we have phagocytosis and gradually the individual acquires a resistance in addition to this, a condition of "latency" being established. Newcomers have not this latency, and every segmentation is followed by a paroxysm of fever, whereas with old residents this latency is the usual feature; an intercurrent factor, such as taking cold, a surgical operation, exposure, bad water, unhygienic living, eating watermelons, etc., usually brings on a chill suddenly, and so coincidently that old practitioners still find in it a ground for rejecting the mosquito theory. The practice of only taking calomel for the "biliousness" merely postpones the evil day. Worse still is the practice of desultory, ill-timed or insufficient quinin taking, which throws all the work on this minimizing mechanism. The spleen and liver enlarge, the patient becomes sallow, has a coated tongue, and his blood, at least from the spleen, contains parasites, especially "female" ones, and under the augmentation of reinfections there is gradually developed an unstable defense; a "toxin fever" drives the patient to quinin or a patent chill tonic at a time when growing parasites are readily disturbed within necrobiotic cells, and—he has a chill, followed by hematuria. The main thing Krauss desires to make clear is that blackwater fever is produced by the disturbance of an unstable immunizing balance, that its primary effect on the infection is to minimize, if not to abolish it, and that quinin, being a possible and most frequent provocator of it, should not be used or its use should be suspended until it can be ascertained if parasites persist or reactions to it no longer occur. The rule that quinin would be justified only when parasites are present is consequently not tenable. The presence of plasmodia is the very evidence of danger, although it may happen that in a given case there is no further reaction.

A practical clinical division of varieties of malarial hemoglobinuria is the following: 1, Hemolytic pernicious fever; 2, hemolytic malarial cachexia; 3, malarial quinin hemolysis. Krauss discusses each of these, and says that patients in the first class may have to be cinchonized, but not until after thorough purgation. Patients in the second class are always to be treated without quinin until convalescence is well established. The treatment of patients of the third is conducted by gradual immunization with small doses of quinin. He then describes Quennec's chloroform treatment, and in conclusion gives this caution to those who insist on treating malarial hemoglobinuria with quinin: Give it intramuscularly and stop it if the fever rises or chills recur during its use; for these are not malarial paroxysms, but are caused by the discharge of immature parasites into the plasma. Quinin positively aggravates such a condition.

45. **Urinary Infections in Obstetrics.**—Tompkins arrives at the following conclusions in his paper:

1. Urinary infection is a common complication in obstetrics, and its possibility should be borne constantly in mind.
2. The urine of pregnant women should be examined routinely for bacteriuria and, on its appearance, vigorous treatment should be instituted.
3. Before commencing treatment for rise of temperature occurring after labor, we should always inquire into the possibility of urinary infection.
4. We advise the prophylactic employment of urinary antiseptics in all cases of labor.
5. The treatment of this complication is eminently satisfactory, and induction of premature labor rarely has to be performed.

New York State Journal of Medicine.

September.

47 *Syphilis. J. A. Fordyce, New York.
48 Acute Intestinal Obstruction, with Special Reference to Post-Operative Obstruction. J. B. Deaver, Philadelphia.
49 *Avulsion of the Bicipital Tuberosity of the Radius. A. L. Hall, Fulton, N. Y.
50 *Physical Therapy in Treatment of Lateral Curvature. A. Holding, Albany, N. Y.
51 Pathology and Diagnosis of Pancreatitis. H. G. Webster, Brooklyn.
52 What Can We Do to Lessen the Death Rate of Pulmonary Tuberculosis. L. Van Hoesen, Hudson, N. Y.
53 *Practical Value of Sour Milk. G. M. MacKee, New York.
54 Lives of Officers of the Medical Society of the State of New York (continued). J. J. Walsh, New York.

47. **Syphilis.**—Fordyce refers to the increasing frequency of extragenital syphilitic infections. These should be borne in mind, for it not exceptionally happens that lesions of this nature are mistaken for malignant neoplasms, septic infections, or other types of granuloma. The clinical features and modes of evolution are less well defined than on the genitals. Among the extragenital sites which have presented themselves to Fordyce are the temporal region, side of the neck, anterior nares, upper and lower lips, tonsils, fingers, back of hand, thigh, nipple, skin over the breast, inner canthus of the eye, central portion of the lower eyelid, and the chin. He discusses the eruptions of syphilis and emphasizes the fact that the cutaneous manifestations are not its most important ones. Dermatologists, he says, are apt to lay too much weight on the external evidences of the malady, and to forget that it is a general infection, which may produce most serious lesions of the viscera and nervous system, in the latter case often irremediable. The article is well illustrated.

49. **Avulsion of Bicipital Tuberosity of Radius.**—Within the past four years Hall has encountered three cases of this condition, without any other injury of the elbow joint. He describes the cases, discusses the condition, and expresses the opinion that although surgical writers have failed to mention this injury, it is not so infrequent as it appears to be, and that many cases of so-called elbow sprain—notably the "jumped elbow"—are in reality cases of avulsion of the bicipital tuberosity.

50. **Lateral Curvature.**—Holding says that no physical examination in any obscure medical case should be complete unless it includes an examination of the back. Particular attention is directed to: 1, Asymmetrical shoulders; 2, asymmetrical scapulæ (as to their prominence or distance from the line of the spinous processes of the spine); 3, condition of the muscles of the back (especially the erector spinæ), whether flabby or presenting asymmetrical band of contracted muscles; and, 4, differences in the loin angles. If a patient is stripped to the hips and his arms are allowed to hang at his sides, a triangular air space is noted between the inner side of each arm and the angled line of the body at the loin—"the loin angle." A marked difference in the shapes of these two triangles should prompt attention to the spine. Observation of these details will frequently lead to the recognition of the patient's ill health when a cursory examiner would overlook the underlying condition and cause the patient to be treated as a neurasthenic. Treatment calls for correction by shoes or foot plates of differences in the length of legs or weakness of feet; re-education of muscular sense, proper dressing and suspension of clothing, systematic training of the spinal and other muscles, including

development of the thorax and breathing exercise, with home treatment to prevent relapse; attention to defects in vision; correction of vicious habits, and nutritious diet. Pain, backache or tender spots usually appear as soon as muscular contractures in the back are relieved. Indiscriminate use of vibrators is to be condemned; the vibrator does more stimulating than relaxing. It is indicated in asthenic cases, but often does harm to contractures in muscles, in which cases constant inhibitory pressure is indicated. Holding figures a simple device for charting the anteroposterior curvatures of the spine, which consists of a vertical arm pierced by a series of horizontal pegs of equal length, which slide with ease through the arm. On applying the ends of the pegs to the spinal column they push through the arm correspondingly with the curvature, thus reproducing the outline, which can be charted.

53. **Sour Milk.**—McKee discusses the methods in which sour milk is used at present, and the conditions for which it is of service. He states that many cases of intestinal putrefaction can be overcome by means of dietetic and hygienic measures and also by the use of intestinal antiseptics, digestive mixtures, etc.; but when it is considered that sour milk is such a powerful agent and that this milk is entirely harmless, it would certainly seem that such treatment should be the method of election. What we are now in need of is experience resulting from extensive and careful clinical observation, and he hopes that this will be soon forthcoming.

Journal Missouri State Medical Association, St. Louis.

September.

55 *Case of Filariasis Nocturna. J. Grindon, St. Louis.
56 Angina Pectoris. F. E. Murphy, Kansas City.
57 *Review of 300 Ureter Catheterizations in Relation to Diagnosis and Treatment B. Lewis and C. E. Burford, St. Louis.
58 Kidney Stones; Pathologic, Clinical and Surgical Phases. A. H. Cordier, Kansas City.
59 *Traumatic Rupture of the Bladder. H. C. Dalton, St. Louis.
60 Cystocele. G. A. Beedle, Kansas City.
61 Pneumopleuritis Followed by Pulmonary Abscess. T. A. Blackmore, Windsor.
62 Henry's Rubber Drainage Spool for Empyema of Chest. O. H. Benker, St. Louis.

55. **Filariasis Nocturna.**—Grindon describes the life history of *Filaria bancrofti* and the constitutional and local symptoms of the conditions. He summarizes the growth of knowledge regarding this parasite and describes a severe case of unfavorable prognosis, adding in a note that the patient had nevertheless been perfectly well for a month.

57. **Three Hundred Ureter Catheterizations.**—Lewis and Burford review their 300 cases of ureter catheterization by means of the catheterizing cystoscope and draw the following conclusions:

1. Cystoscopy with ureter catheterization can safely and easily be done in the office under local anesthesia in 95 per cent. of cases in which it is indicated, without so much as a urethral chill; the time of manipulation being an important factor.
2. Catheterization of the ureters is clearly indicated and should be carried out in all obscure conditions of the upper urinary tract; such as hematuria, pyuria not yielding to treatment, ureter colic, and preceding all operations on the kidney and ureters.
3. In all cases of *x*-ray shadow in the ureter regions, a skiagraph should be taken with ureter catheter made of material that casts a shadow, in the ureter as far as it will pass, making an index pointing directly to the stone, before operation is undertaken.
4. Most cases of pyelitis are amenable to treatment in the early stages, by pelvic lavage; and we have yet to see the case in which actual harm was done by such procedure.
5. Flushing of the ureters with mild antiseptic solutions should be carried out as a routine prophylactic procedure, before the ureter catheters are withdrawn.
6. Many cases of ligation or incision of the ureters in removal of large tumors of the abdomen, might be avoided by the preliminary introduction of catheters in the ureters.

59. **Traumatic Rupture of the Bladder.**—Dalton enumerates the predisposing causes of rupture of the bladder as: 1, Alcoholism; 2, sex; 3, distended bladder; 4, disease of the bladder; 5, urethral stricture; 6, age. The exciting causes of rupture are: 1, Blows; 2, falls; 3, kicks, etc. The clinical manifestations are not always clear. The most constant are: 1, A pressing desire to urinate, but inability to pass anything save a few drams or ounces of blood or bloody urine; 2, sudden onset of severe pain in penis and lower abdomen; 3, more or less tenderness and rigidity in hypogastric region; 4, more or less shock, depending on the size and location of the rupture; 5, subnormal temperature and increased pulse rate. Catheterization does not relieve the pressing desire to urinate. The diagnosis is not always easy, although the mere history of recent injury and the presence of a pressing desire to urinate, with inability to pass anything but a little bloody urine, combined with pain and tenderness in the lower abdomen, should suffice to guide the physician to the seat of trouble. The danger of surgical intervention lies in delay and in improper technic. Early operation is the watchword. Dalton describes a case in which operation was followed by uneventful recovery.

Long Island Medical Journal, Brooklyn.

September.

63 Indications for Immediate Operations in Abdominal Conditions. L. N. Lanehart, Hempstead, L. I.
64 *Indications for Immediate Operation in Diseases of the Upper Abdomen. R. S. Fowler, Brooklyn.
65 Indications for Immediate Operation Following Traumatisms. A. H. Bogart, Brooklyn.
66 Changes in the Blood in Abdominal Cases Requiring Immediate Operation. A. Murray, Brooklyn.
67 *Treatment of Deformities of Infantile Paralysis. W. Truslow, Brooklyn.
68 Early Diagnosis of Carcinoma of the Uterus. A. M. Judd, Brooklyn.

64. **Immediate Operation in the Upper Abdomen.**—Fowler points out the difference of meaning of the word "immediate" in relation respectively to operations on the upper and lower abdomen. Operation for obstruction or septic conditions occurring in the upper abdomen is immediately imperative, while the same condition occurring in the lower abdomen may be delayed a few hours under proper conditions; such conditions being absolute rest of the patient and an absolutely empty stomach—in a word, the inhibition of peristalsis. The indications for such operation are, 1, hemorrhage; 2, perforation—especially, 3, when the leakage has assumed the characteristics of an abscess, which should always be opened at the earliest possible moment;—4, impending gangrene; 5, obstruction, whatever its cause, of the pylorus, pressure on the duodenum from an inflamed pancreas (in a certain proportion of subjects the head of the pancreas surrounds the duodenum), and duodenojejunal obstruction.

67. **Deformities of Infantile Paralysis.**—Truslow summarizes his paper in part as follows: These deformities are due to the effect of gravity on the weakened member and to the normal muscle pulls, unopposed by the weakened complemental muscles or groups. The prevention of deformity consists largely in the application of an outside factor, counteracting this pull against the affected muscles. The relief from stretching strain on the weakened muscles is a factor in the regeneration of such muscles, and therefore, in the restitution to normal function. When contraction deformity is present it must first be completely overcome, allowing normal passive movements in the joint involved, before restitution of power is possible. This is accomplished by mere stretching or by tenotomy of the affected muscle, and by holding the member in the corrected position by plaster-of-Paris dressing and braces until readjustment is completed. A better outcome as to balance of muscle power at a given joint is sometimes accomplished by the transplantation of strong tendons into the insertion of weak ones. Arthrodesis is used when there is complete paralysis. All such transplantations and arthrodesis must be supported for a considerable time. Systematic physical training of weakened muscles is essential, and apparently completely paralyzed muscles present a hopeful field for this work. As much improvement has already been noted in cases formerly considered incurable, we are not without grounds for this hopeful outlook.

Monthly Cyclopedia and Medical Bulletin, Philadelphia.

September.

69 *Treatment of Chronic Bright's Disease. R. W. Wilcox, New York.
70 Case of Tuberculous Keratitis. W. C. Posey, Philadelphia.
71 *Value of Morphin Derivatives in Ocular Therapeutics. W. Fox, Philadelphia.
72 Uses of Chromium Sulphate in Medicine. L. Kolipinski, Washington, D. C.
73 Medicinal Treatment of Tuberculosis as Interpreted by Sajous. J. M. Taylor, Philadelphia.
74 Tinea Favus Pilaris. J. V. Shoemaker, Philadelphia.
75 Stone in the Bladder. S. L. Gans, Philadelphia.
76 Chloroform Poisoning. J. V. Shoemaker, Philadelphia.

69. **Chronic Bright's Disease.**—Wilcox considers the causes of the uncertainty of treatment of chronic Bright's disease, which he attributes to a certain extent to the two varieties of

kidney affections to which this term is applied. He says that we may conclude that in the treatment of both forms of chronic Bright's disease: 1. Most etiologic factors can be modified. 2. The disease, although physiologically curable, yet is histologically incurable. 3. Remissions must not be mistaken for cures (especially in estimating the value of surgical measures). 4. All therapeutics must be rational, and based on (a) a well-planned diet; on (b) well-regulated metabolism, and (c) decreased work of the kidneys.

71. This article appeared in the *Virginia Medical Semi-Monthly*, June 26, 1908, and the *Ophthalmic Record*, August, 1908.

Northwestern Lancet, Minneapolis.

October 1.

77 Tuberculous Meningitis. H. W. Jones, Minneapolis.
78 Etiology, Pathology, Symptomatology and Diagnosis of Acute Cerebrospinal Meningitis, Other Than Tuberculous. A. S. Hamilton, Minneapolis.
79 Serum Treatment of Epidemic Cerebrospinal Meningitis. S. M. White, Minneapolis.
80 Epidemic Meningitis. H. L. Staples, Minneapolis.
81 Acute Degeneration of the Liver Following Chloroform Narcosis. F. Corbett, Minneapolis.

October 15.

82 Medical Education, Medical License, and the Future of Medicine. W. H. Magie, Duluth, Minn.
83 *Principles Underlying the Treatment of Acute Intestinal Obstruction. C. L. Scudder, Boston.

83. This article was published in the *Boston Medical and Surgical Journal*, Oct. 15, 1908, and was abstracted in THE JOURNAL, Oct. 31, 1908, p. 1549.

Albany Medical Annals.

October.

84 Animism in Antiquity and the Present State of the Question. C. G. Cumston, Boston.
85 Acute Anterior Poliomyelitis. C. F. Clowe, Schenectady, N. Y.
86 New Method of Producing Local Anesthesia. G. E. Beilby, Albany.
87 The Guest, or Personal Experiences of a Patient in a Hospital for the Insane (continued).

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

September.

88 Empyema: Case of Intrathoracic Growth. F. Martin, Baltimore.
89 Case of Dementia Præcox. J. Collins, New York.
90 Case of Aortic Aneurism. M. Call and R. S. Bosher, Richmond.
91 *A Series of Cases of Tubal Inflammation Treated by Operation. C. R. Robins, Richmond.
92 Fractured Femur in an Infant. J. J. Purdy, Mineral, Va.
93 Pregnancy Complicated by Malformation of Vagina and Uterus. J. Taylor, Bynum, N. C.
94 Causative Factors and Treatment of Enuresis. M. C. Oldham, Lancaster, Va.

91. **Tubal Inflammation.**—Robins gives a study of twenty-one cases of tubal inflammation. In determining the question of interference he adopts the rule that the patient shall at least be no worse off after operation than before, and to attain this end it is necessary to have a clear idea rather of what the future of the patient will be if not operated on, than to rely on the future, pictured by imagination, from what we suppose must follow the pathologic conditions which we find. The first point is the mortality rate, which is small when cases are taken early in hand, and proper treatment is instituted. The operative mortality depends on several factors, principally the character of the infection and the period at which operation is undertaken. The first factor may be divided into two distinct clinical varieties, pyogenic and gonorrheal. Robins describes the sharply contrasting clinical symptoms of these two forms. As to the period of operation, gonorrheal cases may be treated as chronic from the start. In pyogenic cases there are two distinct stages, acute and chronic. He discusses these conditions and illustrates with cases. What becomes of the patients who are not operated on (referring to the effect on the future health and comfort of the patient)? Some cases undergo practically complete resolution, the patient remaining perfectly well, and normal unless closure of the abdominal ends of both tubes precludes further pregnancy. The tendency to resolution is more marked in the pyogenic form and occurs only rarely in the gonorrheal. Favorable terminations, however, are not the rule, and the patient is apt to suffer from constant discomfort and the constitutional effects of absorption, or from recurrent attacks of pelvic peritonitis. Dysmenorrhea may ensue, especially when the uterus is bound. Unless the case undergoes resolution after the first onset of the disease, there is practically no limit to its duration, and nothing but operation is likely to benefit it. Robins next discusses the effect of operative treatment and the transitions through which the practice has gone. He says that many theories were devised to explain the marked and intractable nervous symptoms that developed in women in whom an artificial menopause was induced, but whatever may be the explanation, the fact remains that such patients often present the most annoying, diversified, and rebellious conditions that a physician is called on to treat, and if a choice must be made between the discomfort and pain and semi-invalidism of chronic salpingitis, and the distressing nervous symptoms following the artificial menopause, the former is a condition to be preferred, with such relief as can be offered by local and medical treatment. This question is particularly acute in young women who have never borne children. Robins is fully convinced that it is to the adhesions, compression, and pressure, and not to the ovaries themselves, that the pain is due in most cases. When these conditions are relieved the pain usually disappears. Pain referred to the ovaries without physical cause is commonly due to some disordered state of the nerves or of metabolism, and operation may not only do no good, but may even make matters worse. For inflammatory conditions, the essential step is the removal of the tubes; they have lost their function, and the attempt to restore the function is seldom successful and leaves the inflamed tube an open avenue for reinfection. In a few cases, perhaps, in which strong reasons exist for pregnancy, the patient may desire to run the risk.

The treatment of tubal inflammation should be divided into two classes, acute and chronic. The acute should include those cases in which there is marked constitutional disturbance and local reaction, marked by elevation of temperature and pulse and abdominal distention, rigidity and tenderness. Gonorrheal cases usually are chronic from the commencement, but when the above symptoms are present they should be classed as acute, and are doubtless mixed infections. Radical operation is not indicated in acute cases giving the symptoms mentioned above. Under appropriate treatment, the mortality is low and many cases go on to complete resolution. The treatment consists in the withdrawal of food and purgatives, elevation of the upper portion of the body, and enemata of normal salt solution, either continuous or intermittent, as best borne. A careful watch should be kept for abscess, and should one develop, it should be opened and drained through the vagina. As a rule, improvement is rapid, and in a few days the temperature and pulse will drop to near normal, and the patient will become comfortable.

Louisville Monthly Journal of Medicine and Surgery.

October.

95 *Minor Injuries. J. B. Richardson, Louisville.
96 Mercury. J. Burke, Manitowoc, Wis.
97 Ocular Manifestations of Organic Diseases of the Brain and Spinal Cord. T. C. Evans, Louisville.

95. **Minor Injuries.**—Richardson discusses smashed fingers and toes, simple incised wounds, lacerated wounds of the extremities, scalp wounds, burns and fractures and expresses opinions at variance with the ordinary views. With regard to simple incised wounds he says: "Do not wash these wounds, as we are more apt to wash dirt into them than out of them. These hands are almost invariably dirty when the injury occurs, but I find they do much better when no dirt is washed away from them. The edges are brought into apposition with adhesive plaster if there is any gaping. Sutures should not be used." Regarding injuries to the hand he thinks that when the injury to the bone is in such a place as to stiffen any of the fingers except the thumb or forefinger, they are best off, in working men. The thumb or forefinger being stiff, however, we still have the one or the other to use in conjunction with it.

Montreal Medical Journal.

October.

99 The Limits of Knowledge. G. A. Gibson, Edinburgh.
100 Central Neuritis. E. M. Somers, Ogdensburg, N. Y.
101 Calcified Fibroma of the Orbit. J. N. Roy, Montreal.
102 Compound Comminuted Fracture of the Skull; Operation. Recovery. W. J. Derome, Montreal, Can.

103 Fracture of the Neck of the Radius. J. A. Nutter, Montreal.
104 Ocular Tuberculin Reaction. H. McKee, R. P. Campbell and P. G. White, Montreal.
105 Accessory Eyelid. G. H. Mathewson, Montreal.
106 Medicine in Canada. M. Charlton.

Dominion Medical Monthly, Toronto.

October.

107 Missed Abortion. R. Ferguson, London, Ont.
108 Expert Medical Testimony. J. J. McEvoy, London, Ont.
109 Squint. E. P. Bucke, London, Ont.
110 Incomplete Myxedema-Hyopthyroidea. J. McWilliams, London, Ont.

Denver Medical Times and Utah Medical Journal.

October.

111 How Does Colorado Climate Influence Tuberculosis? C. Denison, Denver.
112 What Consumptives Should Come to Colorado. S. G. Bonney, Denver.
113 What Consumptives Should not Come to Colorado. W. N. Beggs, Denver.
114 Colorado-Born Tuberculosis. C. F. Gardiner, Colorado Springs.
115 Physicians in Colorado for Tuberculosis. A. C. MacGruder, Colorado Springs.
116 Colorado and Asthma and Hay-Fever. W. T. Little, Canon City.
117 Colorado and Non-Tuberculous Pulmonary Disorders. G. R. Pogue, Greeley.
118 Colorado and Cardiac Affections. F. Finney, LaJunta, Colo.
119 Nervous Disorders in Colorado. H. T. Pershing, Denver.
120 The Pupil: Poetic, Prosaic. E. S. McKee, Cincinnati.

Utah Section.

121 Rational Medicine and Those Who Oppose Its Teachings. H. D. Niles, Salt Lake City.
122 The Plague. T. J. West, Salt Lake City.

Maryland Medical Journal, Baltimore.

October.

123 Stroll Through the Tuberculosis Exhibit.
124 Maryland Hospital for the Insane.

Journal of the Tennessee State Medical Association, Nashville.

October.

125 Prophylaxis in Tuberculosis. Y. L. Abernathy, Hill City.
126 Experimental Tuberculosis Peritonitis. W. M. Litterer, Nashville.
127 Surgery of Tuberculous Cervical Glands. W. A. Bryan, Nashville.
128 How Best to Utilize Our Knowledge of the Communicability of Tuberculosis. H. P. Coile, Knoxville.
129 Marriage and Intermarriage of Tuberculous Subjects. I. A. McSwain, Paris.
130 Bovine Tuberculosis. M. Jacobs, Knoxville.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

October 10.

1 Varieties of Malignant Endocarditis. F. Taylor.
2 *Bees' Stings and Rheumatism. E. W. A. Walker.
3 Aneurism of the Heart Due to Syphilitic Gummata. P. W. Bassett-Smith.
4 Prevention of Sleeping Sickness. J. L. Todd.
5 Etiology of the Degenerative Changes in the Aorta. G. N. Pitt.
6 Results Obtained in the Treatment of Pulmonary Tuberculosis by the Class Method. J. H. Pratt.
7 *An Exocardial Murmur Often Misinterpreted. J. E. Squire.
8 Arthropathies of Acquired Syphilis. R. Waterhouse.
9 *Attempt to Prevent Adhesion of the Pleura After Inflammation. O. Grünbaum and W. O. Pitt.
10 Clinical Estimation of Blood Pressure; the Finger and the Hemomanometer. W. Russell.
11 Apyrexial Typhoid. G. Carter.
12 Constipation. A. F. Hertz.
13 Sciatica and Its Treatment. J. B. James.
14 Treatment of Chronic Gastric and Duodenal Ulcer with Antilytic Serum. E. C. Hort.
15 *Human and Bovine Tuberculosis. N. Raw.
16 *Syphilis. A. Neisser.
17 Dermatomycoses Common to Man and Animals. R. Sabouraud.
18 Methods of Dealing with Suppuration in the Maxillary Sinus. S. Thomson.
19 Idem. A. L. Turner.
20 Permanence of the Improvement in the Shape of the Nose Obtained by Paraffin Injection. W. Downie.
21 Results of Application of Tests to "Deaf-mutes." A. R. Tweedie.
22 *Trachael Insufflation in New-Born Infants. J. A. Swindale.
23 *Infective Warts. H. F. B. Walker.

2. **Bee Stings and Rheumatism.**—Walker reports the result of an inquiry into the alleged popular belief that the poison of bees is protective against rheumatism and may also be successfully employed for its cure. A series of questions was published in certain medical, scientific and bee journals, framed with a view to ascertaining: 1, The extent to which this belief is prevalent; 2, the amount and kind of evidence available in its favor; 3, the amount of evidence which could be obtained to the contrary; 4, the clinical characters of the rheumatism thus stated to be cured. These appear to have been widely copied and to have resulted in extensive correspondence, which the author abstracts, under the headings of letters from medical men, letters from laymen—1, favorable; 2, indefinite; and negative extracts from the lay press and medical press, with notes on artificial preparations of bee poison in rheumatism. There is also an abstract of the results of Dr. Terc, an Austrian physician, of Marburg, Styria, who has carried out the bee-sting treatment for many years past. Walker says that the statements assembled may fairly be regarded as at least establishing a presumption that bee poison can exert some striking influence in rheumatic subjects, and one which deserves an exact investigation. Nor is the action that merely of a counterirritant, since many of the alleged cures are stated to have exhibited a more or less abiding character. He discusses the action of formic acid and the formates in rheumatism, and points out that common beliefs and household remedies of country folk have before now—as in the familiar case of "foxglove tea"—revealed important remedies previously unknown to the medical profession.

7. **A Misinterpreted Exocardial Murmur.**—Squire directs attention to a murmur which, though synchronous with the beating of the heart and caused by the cardiac impulse, is not produced in the heart or in the large blood vessels, but is a breath sound rather than a heart sound. When heard in the immediate neighborhood of the heart, its rhythm suggesting an association with the cardiac contraction, it easily causes the mistaken impression that it is produced by the blood current at one of the orifices of the heart. As a matter of fact, it is produced in the air tubes of the lung by the forcible rush of air through them. The causation is as follows: The impulse of the heart's contraction or the pulsation of one of the large arteries within the chest may produce temporary compression of a contiguous portion of the lung, thus forcing out of it some of the contained air. This forcible rush of air may produce an audible "whiff" or bruit, which will necessarily be synchronous with the contraction of the cardiac ventricles, and thus cardiosystolic in point of time and in rhythm.

9. **Adhesion of the Pleura.**—Grünbaum and Pitt conceived the idea some years ago that if it were possible to keep the two layers of the pericardium apart for some weeks after the inflammatory process had subsided, pericardial adhesions either would not occur, or would be less dense and impeding. The obvious method was to inject fluid into the pericardium. This fluid must be non-toxic and permit of but slow absorption. For this reason liquid paraffin was chosen. They report experiments on guinea-pigs, which led them to the conclusion that injections of paraffin were harmless, and even in some cases beneficial, and that this justified its injection into the pleural cavities of patients suffering from pleural effusion. The method adopted consisted in drawing off the fluid by means of a stout exploring needle attached to 4-foot rubber tubing. A negative pressure of from 3 to 4 feet of fluid is sufficient in most cases. When the fluid stopped running the patient was told to take a deep breath and to breathe out slowly. While breathing out, the rubber tube was removed from the end of the exploring needle, and a syringe containing 20 c.cm. of sterile paraffin was screwed on, and the fluid slowly injected. By this means one ran no risk of injecting the paraffin into the lung tissue, and only a slight risk of producing pneumothorax. In the five cases treated in this way, there has been a total absence of untoward symptoms, and movement of the chest on the two sides became equal. But so far one can not be certain of complete success, because Litten's sign has not been re-established.

15. This paper is practically identical with the author's paper before the International Congress on Tuberculosis, abstracted in THE JOURNAL, Oct. 10, 1908, p. 1259.

16. **Syphilis.**—Neisser discounts Siegel's claim to have found another syphilitic parasite, and considers the question settled—Schaudinn's spirochetes are the cause of syphilis. He discusses the observations of Metchnikoff and others in regard to

the susceptibility of anthropoid apes to syphilis. He states that Finger's successful inoculation with semen, combined with his own observation, that the testes often retain the virus for a long time, throws a certain amount of light on the possibility of a paternal infection of the child on the one hand and on the other hand of the intrauterine infection of the mother. Outside the animal body the virus remains alive and virulent for at most a few hours; thus there is no very great danger of mediate transmission by means of objects. For the prevention of infection he speaks highly of Metchnikoff's 33.33 per cent. calomel ointment inunction, but denies its infallibility. He regards energetic washing, with sublimate solution—2 to 1,000 and 3 to 1,000—as better. He recommends the following:

	gm. or c.c.		
Hydrargyri bichloridi corrosiv.	25		gr. iv
Sodii chloridi	5		gr. viii
Aquæ destillatæ	2		m. xxxii
Alcoholis abs.	5	or	m. ix
Glycerini	100		ʒiiss
Or, instead of glycerin, 100:			
Unguenti paraffini	80		ʒiiss
Glycerini	20		ʒss

He discusses the method of serum diagnosis of Wassermann, Bruck, and himself, and says that, while theoretically, there still exists much obscurity, one can safely declare that by means of a careful application of this serodiagnostic method—the complement fixation—important disclosures as regards diagnosis can be obtained in a great number of cases. Only with the serum of a syphilitic person do we obtain a positive reaction, but, unfortunately, we can not maintain the converse, that negative reaction indicates freedom from syphilis. Neisser insists, however, that its presence confirms immediately the diagnosis of lues, even when the symptoms are wholly obscure and clinically give no support to the diagnosis of syphilis, or especially when nothing is known of a syphilitic history. He speaks highly of the atoxyl treatment, and insists on the importance of a local treatment for all syphilitic processes. With regard to the question of immunity, he says that we may hold to the old view that diseased syphilitics are "immune" against a reinfection, but we must not designate this refractory power as true immunity, which means that an organism free from the disease is insusceptible to reinfection. On the other hand, the assertion is correct that genuine reinfections are very rare—that is, cases in which a typical syphilis develops for a second time in one and the same individual. The so-called immunity in animals really depends on the fact that they are still diseased.

22. **Tracheal Insufflation.**—Swindale reports the case of a still-born child in which after three-quarters of an hour's effort with all the ordinary measures, no respiration could be started. He then passed a soft rubber catheter into the larynx, and after extracting by suction much exudate, he "gently inspired several lots of clean air into the child's lungs, expelling some of it by pressure over the chest after each inspiration." Natural respiration was thus induced, and has resulted in the existence of a lusty infant. Swindale suggests that this method might be adopted after drowning.

23. **Infective Warts.**—Walker reports a remarkable case in which warts broke out on the lines of a tattooing, being absolutely confined to the tattoo marks. There were 38 warts in all. The patient had never had warts elsewhere and none appeared except on tattoo lines. A sketch is appended showing the figure of a woman tattooed and the situation of the warts on the lines.

Lancet, London.

October 10.

24 *Hospitals, Public Medicine, and Medical Studies. Sir T. C. Allbutt.
25 Introductory Addresses Delivered at Medical Schools at Opening Session, 1908-09. C. Slater, Sir J. F. H. Broadbent, H. Sainsbury, and A. M. Kellas.
26 *Division of the Auditory Nerve for Painful Tinnitus. C. A. Ballance.
27 *Serum Treatment of Cerebrospinal Fever in Glasgow Fever Hospital, Belvidere, Between May, 1906, and May, 1908. J. R. Currie and A. S. M. MacGregor.
28 *An Attempt to Rehabilitate the Permanganates. E. C. Bousfield.

24. **Hospitals, Public Medicine and Medical Studies.**—Allbutt discusses hospital management, clinical pathology, the outpatient question, medicine and the state, a ministry of health, clinical professors, medical studies, the concert of methods, portal of qualification, tests of methods, and the relation of reason and imagination to life.

26. **Division of Auditory Nerve for Painful Tinnitus.**—Ballance describes an operation for which he claims that it brings the distressing symptoms induced by certain forms of internal ear disease within the control of surgery, in that such symptoms may be cured by division of the auditory nerve, just as epileptiform tic in the territory of the fifth nerve is cured by dividing the nerve or removing the Gasserian ganglion. Just as in division of the trunk of the fifth nerve, we may hope some day to be able to spare the motor root, which is in no way concerned in the disease, so in division of the auditory nerve we may hope to be able to spare the nerve of Wrisberg, which is in no way concerned with auditory symptoms. Labyrinthine symptoms have their origin in the cochlear ganglion or in the vestibular ganglion, or in both ganglia, but we can not yet separate surgically the cochlear and vestibular divisions of the auditory nerve, so as to spare one or the other as the symptoms may indicate

27. **Serum Treatment of Cerebrospinal Fever.**—Currie and MacGregor analyze the cases of cerebrospinal fever in the Glasgow Fever Hospital between May, 1906, and May, 1908, in which the patients were treated with four different kinds of serum. The total number of cases was 330, of which 105 were treated with antimeningococcic serum. While leading in general to a negative conclusion, the analysis has nevertheless revealed one result in favor of serum treatment. Although on the clinical side, no obvious or constant train of events has followed the injection of serum, and on the statistical side the total case mortality does not appear to have been reduced, fatal issues delayed or favorable illnesses curtailed, on comparing serum-treated survivors of the first ten days with untreated survivors in respect of case mortality, it is found that the treated cases recovered in greater number, and the difference between the respective percentages is sufficient to carry the implication that serum-treated patients who survive the first ten days of illness have a better chance of life. The authors ascribe the relative high general fatality among serum-treated patients and the absence of demonstrable benefit from early administration, partly to the severity of the acute phase. In most cases, there was at least one injection into the spinal theca after withdrawal of cerebrospinal fluid. Repeated injections were usually subcutaneous; massive injections were necessarily so. The authors do not favor the combined method. The results of Flexner's serum are not embodied in this report as coming later, but will be reported in due course.

28. **The Permanganates.**—Bousfield describes experiments with reference to a mode of disinfection for sewage disposal which should be cheap, non-poisonous, and should sterilize sewage for the time. The view that the presence of organic matter interferes with the disinfectant action of permanganate, he considers a negligible factor. He regards the permanganate as the strongest and cheapest agent for the purpose.

Medical Press and Circular, London.

October 7.

29 Sclerotic Diseases of the Spinal Cord. J. Taylor.
30 *Remarkable Case of Malingering. L. Grant and T. H. Campbell.
31 *Antiseptic Vapors in Pulmonary Phthisis. R. Lee.
32 Neurasthenia. Sir J. F. Broadbent.
33 *Huxley Lecture on Tropical Medicine. Sir P. Manson.
34 Treatment of Varicose Veins—Ligature versus Excision. A. E. T. Longhurst.

30. **Malingering.**—Grant and Campbell report a remarkable case of malingering, which illustrates the great variety and succession of morbid conditions that can be induced hysterically. A hysterical girl, having been a source of trouble for some years, at the age of 18 took to her bed with an unilateral megrim-like headache. No treatment and no remonstrances affected her. As the necessity for remaining in bed had to be supported by evidence of suffering, she resorted to various subterfuges. When sympathy was getting exhausted over the headache, she developed a pustular erup-

tion of the leg, and as she failed to hold the sympathy which each new ailment at first created, she suffered in turn with gastrointestinal catarrh; epigastric pain, ineffective vomiting and diarrhea, accompanied by anorexia and pyrosis; conjunctivitis; bleeding from the gums; simulated asthma, with rapid shallow breathing, and a persistent sham cough; pain in the lumbar region; hematuria and passage of stones, the stones being small quartzite (one of the common rocks of the district), derived in all probability from the soles of her brothers' working boots; profuse sweating; palpitation; shortening of breath and cardiac sinking; pustular eczema of the abdomen; a troublesome onychia; and finally, pains in the interphalangeal joints of both hands, a condition which at the time of reporting was being replaced by insomnia. The authors comment on the fact that a woman who might have led a useful life has been simply a trial and an incumbrance, and that the vicious circle brought about by relatives emphasizing every symptom appears likely to be broken only by death.

31. **Antiseptic Vapors in Treatment of Pulmonary Phthisis.**—Lee urges the value of continuous phenol vaporization in pulmonary tuberculosis, and refers to an apparatus whereby it may be obtained. He quotes the case of a physician's wife, supposedly dying of acute tuberculosis, in which this treatment alone was followed some years ago. Gradually the symptoms of septic fever subsided, the lungs recovered and the patient is now alive and in good health

33. This article was published in the *Lancet*, Oct. 3, 1908, and was abstracted in THE JOURNAL, Oct. 31, 1908, p. 1553.

Clinical Journal, London.

October 7.

35 After-Effects of Injuries. C. T. Dent.
36 Bronchiectasis. J. A. Ormerod.
37 *The Personal Factor in Anesthetics. A. de Prenderville.

37. **Anesthetics.**—In view of the fact that physiologists have entered a strong plea for the general adoption of anesthetic machines, whereby dosage may be regulated and controlled, de Prenderville considers it not inopportune to insist *per contra* on the claim of the individual, *i. e.*, the personal administrator, to that consideration which is unquestionably his due. Practice after all teaches the real thing, that personal equation counts for very much in the conduct of an anesthetic sequence.

Journal of Obstetrics and Gynecology of the British Empire, London.

September.

38 *Ovariotomy During Pregnancy. C. G. Cumston.
39 *Supports of the Female Pelvic Viscera, in Which the Intra-abdominal Pressure Is Still Further Defined. R. H. Paramore.

38. Abstracted in THE JOURNAL, Oct. 24, 1908, p. 1458.

39. **Supports of Pelvic Viscera.**—Paramore gives additional considerations in support of his theory as to the supports of the female pelvic viscera, as laid down in an article published in the *Journal of Obstetrics and Gynecology*, June, 1908, and abstracted in THE JOURNAL, July 18, 1908, p. 263.

Journal Laryngology, Rhinology and Otology, London.

October.

40 Septic Thrombosis of Cavernous Sinus Following a Radical Mastoid Operation on the Seventh Day. J. A. Stucky.
41 Two Unusual Frontal Sinus Cases. J. Price-Brown.
42 Two Points in the Development of the Middle Ear and Its Contents. T. Guthrie.

Presse Médicale, Paris.

September 26, XVI, No. 78, pp. 617-624.

43 Pathologic Anatomy and Microbiology of Grave Jaundice in Secondary Syphilis. (Ictère grave syphilitique.) A. Sézary.
44 Madagascar Plant as Remedy for Dysentery. (Le rotra.) Jourdran and Liot.

September 30, No. 79, pp. 625-632.

45 *Pathogenesis of Permanent Slow Pulse. (Pouls lent permanent.) H. Busquet.
46 *Tumors from Inflammation. J. Tissot.
47 Modifications in New French Pharmacopeia. (Nouveau Codex.) A. Martinet.

45. **Pathogenesis of Permanent Slow Pulse.**—Busquet discusses the theory which ascribes bradycardia to some disturbance in the inhibiting nerves, and relates the results of experimental research which show that the Adams-Stokes' syndrome can not be ascribed to direct stimulation of the trunk of the pneumogastric nor to reflex stimulation of its nucleus. Only automatic stimulation, such as from the products of vitiated metabolism or defective nutrition of the medulla, are capable of rendering the pulse permanently abnormally slow. Besides the anatomic heart block, it is possible that irritation of the vagus or of its nucleus may cause dissociation between the auricles and ventricles. It is further possible that some poisonous element in the blood circulating in the coronaries is liable to modify the rhythm of the contractions of the myocardium. It is important to determine which of these factors predominates in the individual case as a logical basis for treatment.

46. **Pseudocancers in the Digestive Tract.**—Tissot relates three striking examples of what he calls inflammatory tumors of the stomach or sigmoid. The tumors were apparently cancerous, with adhesions so extensive that the operation could be only palliative, but they proved to be of inflammatory nature and the gastroenterostomy was followed by retrogression of the lesions in the stomach cases, while the sigmoid tumor retrogressed after an artificial anus was made on the descending colon. The first patient was a woman of 60 who had had stomach symptoms for fourteen years. She was extremely emaciated and the glands in the inguinal region were enlarged. Five years after the operation she had more than doubled in weight, and there is now no trace of a tumor perceptible. In the second case the pylorus was permeable, but for three or four years the patient, a woman of 33, had painful stomach disturbances, and the operation revealed signs of an old ulcer with a large patch of perigastritic adhesions. The incision in the stomach seems to have put an end to the spasm of the pylorus, which evidently must have existed. This seems to be the explanation of the benefit that follows gastroenterostomy in such cases when the pylorus is found apparently normal. The third patient was a man of 59, with chronic sigmoiditis and large tumor. The artificial anus was made ample and the supposed cancer gradually subsided in the course of two years. Such cases encourage operative intervention in the most apparently desperate cases. The constantly progressive course is one of the most instructive features of cancer; with these inflammatory tumors there is usually an alternation of phases of improvement and aggravation, the improvement following strict dieting.

Archiv für Gynaekologie, Berlin.

LXXXVI, No. 2, pp. 255-504. Last indexed Sept. 26, p. 1113.

48 *Traumatic Rupture of Gravid Uterus Near Term. (Traumatische Schwangerschaftsruptur des hochgraviden Uterus mit Austritt des ganzen Eies in die Bauchhöhle.) E. Ehrendorfer.
49 *Symphyseotomy During Pregnancy. (Symphyseotomie in der Schwangerschaft.) F. Lehmann.
50 Ovarian Dermoid Cyst. (Ovarialorganome.)) F. Daels.
51 *Dangers and Usefulness of Intrauterine Injections. P. Zweifel.
52 *Pathogenesis of Eclampsia and Its Relation with Normal Pregnancy, with Dropsy, and Kidney of Pregnancy. A. Dienst.
53 Clinical Behavior of Adenomyoma of Uterus. D. Grünbaum.
54 Connective Tissue Fibers in the Mucosa of the Uterus. (Bindegewebe der weiblichen Geschlechtsorgane.) K. Hörmann.
55 *Toxicology of Placenta; Placental Origin of Eclampsia. F. Lichtenstein.

48. **Traumatic Rupture of Uterus Near Term.**—In the case reported by Ehrendorfer, a farmer's wife, eight months pregnant, fell from a height of a few steps, and after a few days of pains and vomiting she gradually recovered. As delivery did not occur as expected, she was operated on four months after term, and a mummified fetus was extracted by a laparotomy. The uterus had evidently ruptured in the front wall and the entire contents had escaped into the abdomen, the placenta plugging the opening and growing to the edges of the wound and thus preventing the passage of lochia into the abdominal cavity. The patient left the hospital in good condition after two weeks.

49. **Symphyseotomy in Pregnancy.**—Lehmann reports the third case in which symphyseotomy was done as a prophylactic measure a week or two before delivery, in the hope that the scar tissue would stretch during childbirth. As in the other

cases the desired result was not accomplished; the pelvis was not enlarged, as the scar tissue did not yield, not even when there was strong traction from the forceps during delivery.

51. **Dangers and Usefulness of Intrauterine Injections.**—Zweifel has discovered the secret of the contradictory findings by various authors in regard to the passage into the tubes of fluids injected into the uterus. He has been studying the subject for years, making a point of injecting a stained disinfectant into the uterus before removing it on account of cancer. His experience shows that the uterus and the entrance to the tube contract in response to the slightest mechanical or other irritation, and consequently that fluids injected after massage or curetting or even after mere palpation or digital examination find the parts contracted, and thus the fluid does not penetrate into the tubes. On the other hand, when the fluid is injected without any stimulating preliminaries, it surprises the uterus, as it were, and passes almost invariably into the tubes. He found that this occurs even with amounts as small as one cubic centimeter, and even three or four drops furnish enough fluid to make its way into the tubes and set up a peritonitis. Even when the cervix is well dilated, the fluid does not always all run out, especially when it is caustic, causing contraction of the uterus walls from the irritation. He gives an illustrated description of the technic which he has applied in hundreds of cases. A curved metal tube is introduced into the uterus. It contains a twisted wire rod on which cotton is wound. A solution of ferric chlorid is poured through the metal tube and the swab protruding from its tip serves to wipe up the fluid as the tube is gradually withdrawn. The swab also serves to spread the caustic. The facts learned in regard to the penetration of fluids into the uncontracted tubes open a new horizon for therapeutic application of fluids to these structures, especially to combat ascending gonorrhea. He uses for this a mild solution of a silver salt, beginning with 0.1 or 0.2 c.c. of the solution, repeating it every day or two. The patients complained of pains in the affected side for an hour or two, but colic was never observed, and improvement rapidly followed in most cases. He urges others to study the subject in respect to the puerperal uterus, as he has had little experience in this line.

52. **Origin of Eclampsia.**—Dienst devotes nearly a hundred pages to arguments in favor of the assumption that eclampsia is the result of overaccumulation of fibrinogen and fibrin-ferment in the blood. He argues that the increased physiologic demands of pregnancy induce hyperleucocytosis, with consequent destruction of unusually large amounts of leucocytes. This liberates excessive amounts of fibrinogen and fibrin-ferment from the dead leucocytes used up for physiologic purposes. A large proportion of the leucocytes are destroyed in the placenta, and it is possible that all the milder disturbances of pregnancy are the result of the increase in the proportion of the poisonous globulin, that is, the fibrinogen, and of its injurious action on the liver. The fibrinogen probably has an injurious action also on the capillaries, including those in the kidneys. As the liver is unable to neutralize the excessive proportion of fibrinogen, a vicious circle is formed, and pregnancy kidney, dropsy and eclampsia are liable to follow. They are all merely different stages of the same condition. His views lead to the practical conclusion that impending eclampsia might be recognized in time to ward it off if every primipara with edema at the ankles, even without albuminuria, were carefully examined in respect to the leucocytosis and the diet regulated accordingly. Abstention from salt offers good prospects, and reduction of albumin is also advisable as the leucocytes are called on particularly for the digestion of food containing much albumin. Morphin should not be stinted, as it certainly helps to arrest the attacks and render them less frequent. The woman should be delivered as rapidly and as gently as possible, and the removal of the placenta follow as early as practicable; this removes one great deposit of accumulated fibrin ferment. It is possible also that the side-chain theory may show the way for a successful remedy for eclampsia. The fibrin-ferment is certainly an amboceptor, and experimental research has demonstrated the possibility of obtaining an antifibrin-ferment. It is even possible that some chemical substance may be discovered which will neutralize the toxic action of the fibrin-ferment.

55. **Toxicology of the Placenta.**—Lichtenstein's extensive critical and experimental study seems to show, he asserts, that the placenta is no more toxic when its extract is injected into animals than injection of albumin from other sources. He declares that the theory of eclampsia, as due to a specific poison in the placenta, stands on unstable foundations.

Deutsche medizinische Wochenschrift, Berlin.

October 1, XXXIV, No. 40, pp. 1705-1752.

56 *Energy and Matter in Vital Processes. (Kraft und Stoff im Haushalt des Lebens.) M. Rubner.
57 *New Methods for Diagnosing Incipient Tuberculosis. A. Calmette.
58 *Progress in the Study of Diseases of Infants. (Fortschritte in unsern Kenntnissen auf dem Gebiet der Säuglingskrankheiten.) A. Schlossmann.
59 *Prognosis of Operative Treatment of Exophthalmic Goiter. (Prognose der Kropfoperation bei Morbus Basedowii.) Riedel.
60 *Transperitoneal Cesarean Section by "Cervico-mesouterine Longitudinal Incision." (Transperitoneale Sectio caesarea mittels unteren Längsschnitts.) J. Pfannenstiel.
61 *Influence of Asepsis and Infection on Technic of Delivery by Section. (Entbindung durch Schnitt.) H. Sellheim.
62 Pyocyanase in Acute Otitis Media. (Pyocyanase bei akuten Mittelohreiterungen.) C. Leuwer.
63 Forceps Removal of Retained Fetal Membranes. (Entfernung zurückgebliebener Eihäute mit der Eihautzange.) Scheffzek.
64 New Albuminometer. L. E. Walbum.
65 *Are Physicians Justified in Taking Pay from Manufacturing Chemists for Scientific Tests of Pharmaceutic Preparations? J. Schwalbe.

56. **Energy and Matter in the Economy of Life.**—Rubner was selected to review the present state of knowledge in regard to the sum of vital processes which we call life for an address at the recent "Naturforscher Congress," and it is republished here. He protests against the assumption that what we can not understand at present is of necessity unexplainable and supernatural, and he shows how chemists, physiologists and microscopists have each won their way, little by little, into the secrets of Nature, and thrown light on some of them. One of the most remarkable facts is the span of life allotted to each of the mammals, and the regularity with which the intensity of life and the growth is inversely proportional to the duration of the fetal period and the period of growth before attaining maturity. Also that at the time of death each has produced the same amount of energy per kilogram, that is, the living substances in each has accomplished about the same amount of work. In some it has been done rapidly, in others more slowly, but the general law holds good for all. Man is the one exception, as man is distinguished by extraordinary resisting powers, and is able to live much longer than even the mammals most closely related to him. At the time of puberty man has used up only one quarter and at the time of cessation of active growth only one-third of the total amount of energy consumed in the course of one's entire life. Nourishment and transformation into energy and reproduction of used-up living tissue proceed continuously, and there seems to be no reason why they should not proceed indefinitely, except that the parts of the nucleus which preside over the vital processes are incapable of reproduction. As they become used up, there is nothing to take their place, and the individual dies. There is no means of overcoming this physiologic death, and the whole secret of long life is not to shorten it.

57. This article was read at the International Conference on Tuberculosis, in Philadelphia, and was summarized in THE JOURNAL, October 17, page 1358.

58. **Progress in Knowledge of Children's Diseases.**—Schlossmann here surveys what has been accomplished in this line since the foundation of the Berlin Pediatric Society, which was celebrating its silver jubilee as he wrote. He comments on the increasing insistence for breast milk for infants, and on the widening acceptance of the assumption that tuberculosis is a children's disease, that is acquired in childhood, can be prevented in childhood, and must be treated and cured while the patient is still a child. He also urges better facilities for and better training in the study of pediatrics.

59. **Prognosis of Operative Treatment of Exophthalmic Goiter.**—Riedel has operated in eighty cases of exophthalmic goiter, and urges others to advise operative treatment in this disease without allowing it to become the last resort. He makes it a principle to operate without reserve or hesitation when there is a chance of success in a non-malignant affection, while he holds back more than others in cases of cancer. Unless there is a probability that the malignant disease can be absolutely and totally eradicated, he refrains from operating, believing that an incomplete operation entails recurrence, in which case the patient has to contend with both the recurring cancer and the results of operation, while without the latter there would be only the cancer to fight. In a benign affection conditions are entirely different; once relieved by operative measures, complete recovery follows with no dread of recurrence. In exophthalmic goiter the question of operating depends on the condition of the bronchi more than anything else; in case of extensive bronchitis from stenosis—the result of compression by the enlarged thyroid—the prospects are less good. Six patients succumbed to bronchopneumonia in his first 50 cases and one to the effects of the chloroform, and one patient died of bronchopneumonia in his last series of 30 cases. The existing bronchitis in these cases would have deterred others possibly from operating. He has encountered these 80 cases in 874 operative cases of goiter. Patients are learning that the chief danger is from waiting too long. He advocates operating in exophthalmic goiter even when the thyroid is only slightly enlarged, after failure of medical measures not pushed too long. Fully one-tenth of the gland must be left, leaving always some thyroid tissue on each side; its removal is much facilitated by a large horseshoe incision reaching nearly from ear to ear, the lowest part of the incision about 2 cm. above the manubrium. He operates under local anesthesia, and remarks that these patients are particularly liable to be restless and clamorous. The prognosis, however, he does not regard as more serious than that of any operation for goiter.

60. **Transperitoneal Cesarean Section.**—Pfannenstiel regards it as a mistake to reject pubiotomy in favor of Cesarean section in all cases, but the latter may be preferable when, for any reason, it is deemed necessary to allow the patient to get up after four or five days—which would be impossible after a pubiotomy. The transperitoneal section with the low longitudinal incision is preferable also, he says, when the uterus has to be emptied without delay, and the vagina and cervix are normally narrow and rigid. Such conditions encountered in eclampsia and nephritis justify Cesarean section by the abdominal or the new routes, as also in transverse presentation or impending rupture of the uterus from any cause with a living child.

61. **Influence of Asepsis and Infection on Delivery by Section.**—Sellheim tabulates the particulars of twenty-one operative deliveries at the Tübingen maternity, remarking that the "dubious" cases are those in which the obstetrician is at his wits' end. It is too late for a certainly aseptic operation, and it is not late enough for treatment along the lines of the certainly infected cases. For both the dubious and the infected cases, the future belongs to prophylaxis. The responsible accoucheur, he says, has himself to blame if he allows the dubious to become actual infection. The decision as to delivery by section belongs at the very latest in the period before the total bankruptcy of the natural forces. Only before this arrives is the accoucheur able to resort to methods which will save the child without danger for the mother; after this, it is too late. Early recognition of the impending insufficiency of the natural forces enables the operative delivery to proceed with certainty of asepsis. Anticipation of the impending indications is the key to sound conservative principles in obstetrics; false conservatism waits so long that irreparable harm results. It is worse to be too late than to be too early. It is the same in obstetrics as with cancer; the main point is an early diagnosis. In the twenty-one cases related, the four deaths were inevitable from the previous condition of sepsis. Various technics were followed in the different cases, transperitoneal or extraperitoneal Cesarean section or suprasymphyseal delivery.

65. **Ethical Aspect of Taking Pay from Manufacturing Chemists for Scientific Tests of Their Pharmaceutic Preparations.**—The German Medical Press Association last year made out a "blacklist" of writers of unsavory medical write-ups, as mentioned in THE JOURNAL at the time, and the question as to the ethical aspect of physicians accepting pay for any research of the kind was referred to a committee to report at this year's meeting. It was found that the members of the committee held widely divergent views, and question blanks sent to 58 leading physicians elicited 53 expressions of opinion which were also conflicting. Twelve of the replies were favorable to remuneration from the manufacturing firms for research on animals and in the clinic, while seven considered payment proper only for experimental research to defray the large expense for animals involved; thirty of the replies denied that an honorarium was ethical for either experimental or clinical research Spatz, the editor of the Munich medical weekly denounced the practice of accepting pay for clinical research on medicinal preparations as opening the door to abuses and as rendering of no avail all the efforts to suppress the commercial medical write-ups. Ehrlich made a strong plea for experimental therapy and for its further development, saying that the manufacturing chemists should pay for tests of their products in scientific institutes, not only the expense for animals, but for enlargement of the laboratory facilities and assistance. Among the others who took the same view were F. v. Müller, A. Fraenkel, Gaffky and v. Noorden. The latter described his practice as the demanding of a certain sum when requested to test a given pharmaceutic preparation, the sum ranging from $250 to $500, to be paid to the hospital or research fund in his charge, half to be paid in advance as a donation, regardless of the outcome of the tests, the other half to be paid when some article on the subject was published by himself or his assistants. He never accepted a personal remuneration. All were agreed that pharmacologic research was entitled to compensation. The committee in presenting its report emphasized the divergence of views, and the Medical Press Association passed no decisive resolutions, not regarding the matter as one for medical editors to decide. The editorial remarks, in conclusion, that there is really no essential difference between utilizing the sick in one's charge as material for paid bedside instruction of medical students, and utilizing them for paid tests of pharmaceutical preparations. The honorableness of one's motives should not be questioned any more than in expert testimony in court. At the same time, the preponderance of the testimony presented in the editorial seems to be against the acceptance of pay for such work as incompatible with the dignity of a clinic.

Deutsche Zeitschrift für Chirurgie, Leipsic.

September, XCIV, Nos. 3-4, pp. 201-405.

66 Umbilical Hernia. (Technik der Radikaloperation der Nabelbrüche.) E. Martin.
67 Structure of Synovial Membrane and Absorption of Joint Content Under Variable Mechanical Influences. (Bau der Synovialmembran.) F. Kroh.
68 Roentgen Examination of Spine. (Röntgenuntersuchung der Wirbelsäule.) Grässner.
69 *Perforation of Empyema in Ethmoidal and Frontal Sinuses into the Orbit, a Typical Complication of Scarlet Fever. (Durchbruch von Siebbein- und Stirnhöhlen-Empyemen in die Orbita.) H. Preysing.
70 Congenital Dislocation of Hip Joint. (Angeborene Hüftverrenkung.) Dreesmann.
71 Acute Dilatation of the Stomach or Duodenal-Jejunal Ileus? (Akute Magenlähmung oder duodenojejunaler Dünndarmverschluss?) Kayser.
72 Isolated Laceration of the Mesentery After Contusion of the Abdomen. (Isolierte Mesenterialabreissungen nach Bauchkontusionen.) Kudlek.
73 Non-Cornified Superficial Epithelioma. (Der nicht verhornende Plattenepithelkrebs der äusseren Haut.) Veit.
74 *Various Forms of Puerperal Mastitis and Their Treatment. Feinen.
75 Roentgen and Clinical Study of Acromegaly. Vorschütz.
76 Fracture of Femur: 179 Cases. (Im Kölner Bürgerhospitale behandelte Oberschenkelbrüche, 1902-1906.) H. Luxembourg.

69. **Perforation of Empyema in the Orbit, a Typical Complication of Scarlet Fever.**—Preysing calls attention to a scarlatinal affection of which he has encountered seven cases, and he has learned of fourteen more in the experience of others. The ethmoidal cells and frontal sinus are the seat of a suppurative process, finally perforating into the orbit. The first sign is a swelling of the lids, generally in the inner angle,

and it is often mistaken for a purely orbital process. In his first case the process had progressed to loss of vision, but afterward he learned to recognize it in its incipiency from the swollen lids and history of scarlet fever. In one case a child of 4 had typical scarlatinal necrosis of the temporal bone, and the swollen lids made him confident that the ethmoidal cells on that side were also the seat of a scarlatinal complication. The operation was very tedious on account of the smallness of the bones. A frontal sinus had not yet developed, and the ethmoidal cells were found normal until he was convinced that he had been mistaken in his diagnosis, but at last, in the extreme posterior portion, he found the abscess and necrotic bone, and the child was promptly cured. The difficulty in finding the focus in the bone in this early stage and the benefit of treatment were instructive in this case, and confirm the importance of the symptom of the inflammatory swelling of the lids. The scarlet fever in all these cases had been unusually severe, generally with necrosis of bone on both sides and glandular abscess in the neck. The maxillary sinus was involved only in one case. The finding of otitis media confirms the diagnosis, but the most striking symptom is the edema of the lids or a tumor-like swelling at the inner angle. There is usually septic fever. He believes that scarlet fever runs a severer course in children with enlarged tonsils, and he even suggests the possibility of a favorable influence on the course of scarlet fever from operative measures to remove obstruction in the upper air passages, especially when there is suppuration in a tonsil. He urges the importance of systematic cleansing of the nasal passages in the course of scarlet fever; all force must be avoided and he prefers salt solution for the purpose, very small amounts being instilled with a teaspoon or pipette. When this is done often enough the child is soon able to breathe through its nose freely, and the general condition is benefited to a surprising extent. He gives ten illustrations of some of the cases of perforation of a sinus process into the orbit, showing the course of the affection and the aspect after recovery. From eight weeks to six months elapsed before the trouble was entirely cured, as the process was tedious and sequesters were liable to be expelled after weeks or months. No disturbance in vision was noted in any case in which an operation was done early. In the absence of operative treatment the child is liable to fatal sepsis or meningitis, or at least total blindness on that side. The affection was always unilateral in the cases on record.

74. **Puerperal Mastitis.**—Feinen advocates a minute incision with suction treatment for circumscribed mammary inflammation as having given the best results at Bardenheuer's clinic. For interstitial mastitis the breast is turned back, and the abscesses are incised and drained. The ten cases in which this was done were cured by this single and simple operation which yields cosmetically the best results, with merely a linear scar at the edge of the breast. This technic does not interfere with the functional capacity of the sound parts, and it removes only the really diseased tissue, while the absence of any scar in the gland tissue proper reduces the danger of ultimate cancer formation. In gangrenous mastitis, removal of the gangrenous patch seems to be all that is necessary, but puerperal tuberculous mastitis requires ablation of the entire breast.

Medizinische Klinik, Berlin.

September 27, IV, No. 39, pp. 1481-1520.

77 *Suppurative Inflammation of Internal Ear. (Eitrige Entzündungen des inneren Ohrs.) W. Uffenorde.
78 *Non-existence of "Spastic Obstipation." (Gibt es eine spastische Obstipation?) I. Boas.
79 Treatment of Anterior Urethritis. S. Katzenstein.
80 Technic of Tonsillectomy. (Abtragung der Rachenmandel mit dem bajonettförmigen Adenotom.) J. Fein.
81 Local Treatment of Diphtheria with Pyocyanase. G. A. Büllmann.
82 Marked Disinfecting Action of Solution of Chlorinated Soda. (Unterchlorigsaures Natron als Desinfiziens.) E. Hartung.
83 Diagnosis and Treatment of Pancreatitis. Dreesmann. Commenced in No. 38.
84 The *Spirochæta Pallida* in the Ultramicroscope. (Nachweis der Spirochæte pallida im Dunkelfelde.) V. Mucha.

77. **Suppurative Inflammation of the Internal Ear.**—Uffenorde states that labyrinth involvement was observed in forty cases of inflammation of the internal ear in his service in the last three years. He analyzes the clinical manifestations, remarking that when only a few of the characteristic symptoms are present, differentiation is difficult, especially when some of the symptoms have to be elicited by changes in position, etc. In several cases nausea was the only symptom of suppuration in the internal ear, running an almost entirely latent course. Two of these patients were under treatment elsewhere for gastritis, but all stomach disturbances vanished after the operation on the ear. He mentions parenthetically that suppuration in the labyrinth may persist for years without healing, and without inducing fatal complications, which yet are liable at any moment.

78. **Non-existence of Spastic Obstipation.**—Boas declares that he has never been able to discover a case of what others call "spastic obstipation," although he has been diligently seeking for it for fifteen years. There is no defined form of obstipation which can be set apart by its subjective or objective symptoms as a special type. The symptoms of spasm of the colon may be observed in nervous excitable persons, although the bowels may be sound; also with intestinal disturbances with constipation or chronic diarrhea; with chronic catarrh of the large intestine or chronic sigmoiditis, and with cancer of the rectum. He regards the spasm of the colon as a frequent attribute of general neurasthenia. It may occur at intervals, but it is not connected with any special type of stools or of habitual obstipation. He remarks that he makes extensive use of oil enemas in cases of habitual obstipation in which relief is not obtained by purely dietetic measures, which he always tries first. The efficacy of oil injections does not depend in any way on the nature of the obstipation or the shape of the stools. If the oil enemas fail, the obstipation is not of any special type, but merely of intense degree. It may be cured by indefinite continuance of the oil injections, in which case the amount of oil possibly can be gradually reduced. A large proportion of the habitually constipated are obliged to use oil permanently. In this case it is not a remedy, but merely a useful, indeed the most useful means of regulating bowel functioning. A diet rich in cellulose seems to be indicated in almost all cases of habitual obstipation; belladonna is a valuable sedative in intestinal disturbances, but he denies that it has any curative action. In conclusion, he states that with the exception of lead poisoning, the whole structure of the so-called "spastic obstipation" is built on shifting sand.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena.

XIX, No. 2, pp. 187-380. Last indexed August 1, p. 448.

85 *Diagnosis, Surgical Treatment and Symptomatology of Tumors of the Cerebellum. (Kleinhirngeschwülste.) A. Homburger and S. Brodnitz.
86 *A Typical Localization of Metastasis of Carcinoma of the Stomach. (Typisch lokalisierte Metastase des Magencarcinoms.) J. Schnitzler.
87 Experimental Research on Phloridzin Diabetes. P. Esau.
88 The Opsonic Index in Diagnosis of Infectious Diseases. (Opsonin-untersuchungen bei Infektionskrankheiten.) F. Rolly.
89 Tumor on Frenum of Tongue in Infants. (Die Rigasche Krankheit.) C. Schulz.
90 *Operative Treatment of Epilepsy from Clinical and Anatomic Standpoint. S. Auerbach.
91 Sensibility of the Stomach. (Magensensibilität.) J. E. Schmidt.
92 Antitoxin Treatment of Tetanus. J. Jerie.
93 Postoperative Injuries of the Vocal Cords After Removal of Goiter, and Their Ultimate Outcome. (Postoperative Stimmlippenschädigungen nach Kropfoperationen und deren späteres Schicksal.) H. Leischner.
94 Tests of Kidney Functioning in 23 Cases. (Zur funktionellen Nierendiagnostik.) P. Clairmont and H. v. Haberer.
95 Results of Thyroidectomy. (Folgen der Schilddrüsenexstirpation.) O. Zietzschmann.
96 Microscopic Metastasis in the Ovaries with Primary Carcinoma of the Stomach. (Lediglich mikroskopisch nachweisbare metastatische Carcinomerkrankung der Ovarien bei primärem Magencarcinom.) A. Sitzenfrey.

85. **Tumors in the Cerebellum.**—The clinical diagnosis in the four cases described was confirmed by the operation or autopsy. The pulse rate did not decline in any of these cases, and the vertigo was toward the affected side, contrary to what has been observed by others. The ataxy of the left arm was instructive in one case, as also in another the degenerative hemiatrophy of the tongue. The regulation of the tonicity and coordination was deranged in all four cases, especially their interrelations. The sequence in which the symptoms develop is particularly important. This mode of evolution by recurring exacerbations —"pushes"—has not been sufficiently

studied, the authors remark, probably because the patients are rarely seen early enough. It is actually dramatic, they say, to be a spectator of one of these "pushes," and to observe how, after the first storm signal of increased pressure on the brain, symptom after symptom appears and gradually, in place of the vague outlines of general cerebral phenomena with perhaps only a slight suggestion of local coloring, a well-defined symptomatologic unity enters on the scene which renders an exact diagnosis and localization possible. In their cases the entire complex developed in a few days, and the evolution of the papillitis could be traced from day to day. The storm lasted six weeks, four weeks, ten and seven days, and the preliminary general brain phase corresponded to these proportions, being, respectively, three years, six, three and two months. Only a few days elapsed between the aggravation of the general symptoms and the appearance of local signs. Any increase in the general symptoms should therefore be regarded as a warning sign impelling to frequent careful examination, so that the moment when the local signs appear and become stable may be recognized, and the opportunity seized for early diagnosis as to the side affected and for prompt surgical intervention. It must be further borne in mind that the homolateral focal symptoms, marked at first, are liable to be masked by the development of contralateral disturbances. Close observation of the "pushes" is thus an extremely important element for the early diagnosis of cerebellar tumors, and the fact of their occurrence is a most peculiar feature of the course of this class of neoplasms.

86. **Typical Metastasis of Gastric Cancer.**—Schnitzler states that in eleven cases he has discovered a metastatic carcinoma in the anterior wall of the rectum. The patients had all applied on account of disturbances from the metastatic affection, and all were unaware of the existence of the primary cancer, which was in the stomach in ten and in the pancreas in one. Differentiation from primary rectal carcinoma depends mostly on the absence of ulceration, which is constant with the primary growths. With the metastatic, the mucosa is stretched tight and is immovable, and there is no admixture of blood with the stool unless from the primary cancer in the stomach. The shape of the tumor is also characteristic, extending abruptly into the lumen of the rectum, forming a step. It is probable that this rectal localization of the metastasis in men corresponds to the metastases in the ovaries in women. Extirpation of the rectal growth is inadvisable on account of its secondary nature. He gives an illustration of this typical metastasis, hoping thus to prevent mistaken diagnoses in future.

90. **Operative Treatment of Epilepsy.**—Auerbach surveys his experience with six cases of epilepsy in which he operated with the cure of four of the patients, permanent to date from eight to twenty-five months later. He regards increasing numbers of seizures in Jacksonian epilepsy, increase in the paralyses and signs of encroaching mental decline, as absolute indications for operative measures, especially for the young. After the age of forty he would not operate. In genuine epilepsy, surgical intervention should be considered more readily the more the phenomena are restricted to one side during or after the seizure, and especially with the discovery in the anamnesis of injury to the head from trauma or an encephalitic process. If there are no pronounced and constant symptoms and no unilateral phenomena, he would make an osteoplastic resection of 8/6 or 6/4 cm., remove a strip of bone the width of one's finger, or do craniotomy and excise the dura according to Friedrich's technic. In case of trauma, he would select the point of injury, but otherwise would operate on the right motor or frontotemporal region, sparing the functionally more important left hemisphere. He describes further indications for operation, and states his conviction that the motor domain is much more extensive than is indicated by the response to electric stimuli. After the operation the bromids should be kept up for a long time, with life-long abstinence from alcohol. The epilepsy generally begins in youth, and thus at a time when the regenerating power of the organism is at its height. It must also be borne in mind that if the operation merely prevents epileptic dementia, even without complete cure, this is a great gain.

Münchener medizinische Wochenschrift.

September 29, LV, No. 39, pp. 2025-2072.

97 *Tuberculin Reaction and the Nervous System. (Klinische Ueberempfindlichkeit.) E. Moro.
98 *Present Methods of Stimulating Diuresis. Romberg.
99 Differentiation of Tuberculous Pus with Millon's Reagent. (Eignet sich das Müllersche Verfahren zur Unterscheidung von akutem und tuberkulösem Eiter mittels Millon's Reagens?) Hosemann.
100 Tuberculosis Antibodies and Immunity. (Tuberkulose-Antikörper und Immunität.) M. Christian and S. Rosenblat.
101 Diagnostic Delimitation of Certain Forms of Idiocy. (Weitere Fälle von tuberöser Sklerose.) H. Vogt.
102 *Occurrence and Significance of Unilateral Higher Temperature in Lung Affections. (Halbseitig erhöhter Temperaturen bei Lungenaffektionen.) H. Vogel.
103 Simple Spectroscope for Comparison. (Einfaches Vergleichsspektrokop.) K. Burker.
104 Intravenous and Subcutaneous Administration of Heart Remedies. (Intravenöse und subkutane Anwendung von Herzmitteln.) O. Hornung.
105 Gangrenous Tumor of the Leg in Natives of East Africa. (Das brandige Geschwür der unteren Extremität.) Lenz.

97. **Tuberculin Reaction and the Nervous System.**—This subject will also be discussed editorially in THE JOURNAL in the near future. Moro's assumption that the percutaneous tuberculin reaction is a late reflex, an angioneurotic inflammation, is confirmed by the observation of inflammation at a point where plain lanolin had been rubbed into the skin, no inflammation being observed at this point until after a tuberculin salve had been rubbed into the skin on another part of the body. In one case he rubbed the tuberculin salve in the center of a patch of scrofulous lichen. The specific reaction was followed by the complete retrogression of the lichen in 24 hours. Moro does not believe that the antibodies are materially concerned in this percutaneous reaction, citing as grounds for this view the negative reaction to the tuberculin test in advanced stages of tuberculosis and directly after measles, and in the course of prolonged tuberculin treatment; the flaring up of old points of reaction on repetition of the tuberculin test; the Koch focal reaction; the intensive and accelerated reaction on repeating a test; the secondary tuberculin reaction, and the long duration of incubation. In regard to this latter point he experimented with salve made with caterpillar juice and other irritants, with the same technic as for the percutaneous test, and found that the cutaneous reaction did not become manifest until after 10, 24 or even 48 hours.

98. **Diuretics.**—In the course of this study of modern methods of promoting diuresis, Romberg remarks that calomel and sodium salicylate have each a direct injurious influence on the kidneys. That induced by the latter is transient, but calomel in large doses may cause an actual nephritis. The slightest suspicion of a kidney affection contraindicates calomel. He never gives it unless sure of normal kidneys, especially in elderly persons. His clinical experience has shown that restriction of salt in tuberculous peritonitis has aided in reducing the ascites. The modification of osmosis mobilizes deposits and diuresis is promoted. The most effectual diuretic is dimethylxanthin* (theophyllin). Its injurious action on the stomach can be avoided by giving very small doses at first, on alternate days, with only two doses a day, or three or four doses with longer intervals, or it can be given by the rectum.

102. **Higher Temperature on Side of Lung Affection.**—Vogel gives a number of curves which show the marked difference in the temperature in the axilla on the side of an active process. Comparison with the other side shows the course of the affection and the unequal progress of the lesions when both sides are affected; it also reveals, further, when an apparently harmless "cold" has aggravated or aroused a dormant process.

Wiener klinische Wochenschrift.

September 24, XXI, No. 39, pp. 1347-1374.

106 *Treatment of Fractures and Dislocations. (Behandlung von Knochenbrüchen und Verrenkungen.) C. Ewald.
107 Treatment of Congenital Coxa Vara. O. v. Frisch.
108 Properties of Eosinophile Leucocyte Granula. (Zur Chemie der Zellgranula.) E. Petry.
109 Aplastic Anemia. A. Herz.
110 *Treatment of Chronic Constipation. V. Liebman.

106. **Treatment of Fractures and Dislocations.**—Ewald gives a number of illustrations showing defective healing under various methods of treating fractures, and describes some

*Theobromin and theophyllin are both known chemically as dimethylxanthin. See New and Non-Official Remedies, p. 125, 127.

measures which contribute to better results. Among them is a support shaped like a small toboggan; the curving part fits over the leg in the immobilizing cast. Traction on the projecting long part permits ready rotation of the limb; if the long part projects downward, as the leg rests on it, automatic rotation results. He adds that as the muscles in the back are the strongest, the physician should utilize them in reducing a difficult dislocation or fracture, and he gives illustrations showing how this can be accomplished. For the hip joint, for example, the patient's leg passes over the physician's shoulder and is tied by the ankle to the leg of the table. The physician has it thus in his power by raising or lowering his shoulder or moving farther to the left or right to bring tremendous pressure to bear on the hip joint by thus utilizing the leverage of the powerful muscles in his own back.

110. **Treatment of Chronic Constipation.**—Liebmann has been examining all his patients with chronic constipation and has found evidences of slight ptosis of the intestine in a surprisingly large number of cases, even when there were no symptoms indicating ptosis except the tendency to constipation. The ptosis is liable to induce a tendency to kinking at some point, and the accumulation of masses of feces at this point drags the intestine still further down. He orders an abdominal bandage with a pad or a truss to raise and hold the intestine in its normal place and put an end to the kinking. The results were good in many instances. A number of patients who had been obliged to use laxatives for years found that defecation proceeded normally from the third or fourth day after putting on the band. Skiagrams showed that the transverse colon was displaced far down, and that the pad on the abdominal band restored it to place and held it there. The little difference of even 1 cm. was sufficient to restore normal bowel functioning. He assumes that if the stomach is displaced downward the transverse colon and sigmoid flexure are sure to be correspondingly displaced. He relates a few examples showing the great benefit from the pad treatment in these cases.

Zentralblatt für Chirurgie, Leipsic.

October 3, XXXV, No. 40, pp. 1169-1192.

111 Fixation of Wandering Kidney and Wandering Liver by Suturing Through Magnesium Plates. (Fixation der Wanderniere und Wanderleber mit Magnesiumplatten.) J. Gobiet.

Zentralblatt für Gynäkologie, Leipsic.

October 3, XXXII, No. 40, pp. 1297-1328.

112 *Danger with Placenta Prævia of Natural Straining to Aid Delivery, and Extraperitoneal Section of the Uterus as Means to Reduce It. (Gefahren der natürlichen Geburtsbestrebungen bei Placenta prævia und ihre Verminderung durch den extraperitonealen Uterusschnitt.) H. Sellheim.

113 A Lymph Node in the Cervical Mucosa. (Ein Lymphknötchen in der Schleimhaut der Portio vaginalis uteri.) A. Lesniowski.

112. **The Dangers of Natural Straining with Placenta Prævia.**—Sellheim calls attention to the natural efforts to aid delivery as the main danger for mother and child in case of placenta prævia, and urges that they should be prevented by prompt vaginal or the classical Cesarean section, or by the perfected extraperitoneal technic. In eight cases managed on these principles, as described in detail, both mother and child left the clinic in good condition with no fatalities. He says that every woman with hemorrhage and a certain diagnosis of placenta prævia should be treated at once with the extraperitoneal technic as long as the child is living and asepsis is insured. If the hemorrhage is not threatening and the child is non-viable, it is possible to wait and by combined version start spontaneous delivery, or the attempt can be made to reduce the size of the placenta attachment and await spontaneous delivery. In case of much hemorrhage, combined version should be done and the patient stimulated with every possible means to improve the general condition until delivery proceeds spontaneously. If the case is infected, the "uterus-wall-fistula" technic should be considered in case of a living child. If there is only suspicion of infection, he quarantines the patient in bed for twelve or twenty-four hours. In a delivery by the natural route, the body of the uterus is tamponed moderately, the cervix a little more firmly and the vagina very firmly, as soon as the slightest hemorrhage appears after the separation of the placenta.

Gazzetta degli Ospedali e delle Cliniche, Milan.

September 27, XXIX, No. 116, pp. 1225-1240.

114 *Treatment of Tetanus. F. Pancrazio.

115 *Scarlet Fever and Erysipelas. (Scarlatina ed eresipela.) G. Appiani.

116 *Infection by Way of Upper Air Passages and Digestive Tract. (Importanza delle prime vie aeree e digerenti nelle malattie infettive.) L. Chierici.

117 *Pseudophosphaturia as Sign of Debility. (La cosi detta fosfaturia come sintoma precoce di tubercolosi polmonare.) A. Campani.

118 Ocular Tuberculin Reaction. (Oftalmoreazione.) G. Giovannini.

119 *Parathyroid Treatment of Pregnancy Albuminuria and Eclampsia. (Albuminuria delle gravide curato con la paratiroidina.) G. Quadri.

114. **Serum Treatment of Tetanus.**—Pancrazio points out that while serotherapy of tetanus is founded on solid bases, yet the amount of toxin may vary within wide limits in individual cases, and the resistance to it may differ. It is of the greatest importance, therefore, to institute preventive treatment at the earliest possible moment. He calls attention to the frequent occurrence of severe pains in the back as the premonitory symptom of the onset of tetanus. In his eight cases, which he reports in detail, all the patients complained of this diffuse backache, generally as the first sign of trouble; in three patients it was the only clinical manifestation for several days; in others it preceded the trismus only by a few hours, and in one was not noted until after the full development of the tetanus. His experience confirms the efficacy of direct injection of antiserum into the spinal canal, repeating the injections if necessary, and supplementing them with intramuscular injection of the serum. In his two fatal cases the syndrome was not so severe apparently as in some of the others.

115. **Scarlet Fever and Erysipelas.**—Appiani describes two cases of scarlet fever in which erysipelas developed on the face during the early convalescence. The patients were a man of 28 and a woman of 45, and the apparently severe erysipelas ran an unusually mild course, with no chills, headache or fever—merely the local phenomena of severe facial erysipelas.

116. **The Upper Air Passages as Inviting Infections.**—Chierici presents a series of arguments and experiences demonstrating anew the importance of the upper air passages as the primary seat of the most varied affections, from consumption and typhoid to streptococcus and staphylococcus processes at remote points. He believes, however, that the normal organism has so many means of defense against infections that it can take care of germs entering the upper air passages and digestive tract if these passages are not allowed to get out of order, or, in case of trouble, if the natural defensive forces are reenforced. It is useless to try to destroy all the pathogenic germs—this is an unreliable ideal, he says. The physician's efforts should be devoted to popularizing the idea that the integrity of the upper air passages and of the digestive tract is the one indispensable element in the prophylaxis of many if not most of the infectious diseases and processes.

117. **Phosphaturia as Early Sign of Tuberculosis.**—Campani protests against the assumption of increased elimination of phosphoric acid in this condition—the trouble is merely that the urine is more alkaline and thus the earthy phosphates are precipitated more readily. It is a pseudophosphaturia, not a true one, and should properly be called hypoacidity of the urine. This condition may be observed in youths and men as the result of a sexual neurosis; the prostatic secretion mixing with the urine in unusually large proportions may render it alkaline, or the urine may become alkaline in consequence of dyspeptic disturbances or too sedentary life or excessive physical exertion. Persons with this hypoacid urine are pale and thin; the urinary syndrome is probably both cause and effect of the general debility. Administration of an acid will disguise this hypoacidity without actually removing it. The hypoacid urine is not a sign of tuberculosis, but merely of debility.

119. **Parathyroid Treatment of Eclampsia.**—Quadri adds another to the list of cases of eclampsia published by Italian clinicians in which benefit was derived from treatment with parathyroid extract.

Sei-i-kwai Medical Journal, Japan.

August, XXX, No. 8, pp. 315-324.

120 *Illness Caused by *Bacillus paratyphosus* (Type A) and Its Pathological Appearances. R. Kasuya.

120. **Paratyphoid Infection (Type A).**—Kasuya has encountered 17 cases of paratyphoid infection of Type B. The symptoms resemble those of typhoid fever, but less severe. No cases of the Type A infection have been observed in Japan until the case here reported, with autopsy findings, but two other cases have been reported since, in the last two or three months in Japan. He urges that paratyphoid infections should be put on the list of notifiable diseases, requiring the same prophylactic regulations as typhoid fever.

Hygiea, Stockholm.

August, LXX, No. 8, pp. 689-786.

121 Last Illness—Diabetes—of King Oscar II. (H. M. Konung Oscar II:'s sista sjukdom och död.) C. Flensburg.
122 *Polycythemia. S. A. Pfannenstill.
123 Infantile Affections Resulting from the Food. (Om spädа barns uppfödning och af näringen beroende sjukdomar.) J. Ahlfors.
124 *Treatment of Sympathetic Ophthalmia with Sodium Salicylate. (Om den sympatiska ögoninflammationens behandling med salicylsyradt natron.) J. Widmark.
125 Abnormal Renal Vessels and Hydronephrosis. (De anormala njurkärlen och hydronefrosen.) G. Ekehorn.
126 Pregnancy Pyelitis. (Pyelitis under graviditet.) C. Wettergren.

122. **Polycythemia.**—Pfannenstill reviews the subject of polycythemia from various standpoints, evidently without personal experience. He goes over the same ground as Osler in his last article on the subject, of which a full summary was given in these columns Feb. 15, 1908, p. 565. Pfannenstill quotes Hayem to the effect that the future belongs to hematology.

124. **Treatment of Sympathetic Ophthalmia with Sodium Salicylate.**—On the basis of five cases of sympathetic ophthalmia treated with sodium salicylate, Widmark expatiates on the great efficacy of this treatment. His experience confirms the twelve other similar cases previously published from this same eye clinic. He gave from 2 to 4 gm. (30 to 60 grains) of the sodium salicylate during the day, with atropin and hot fomentations. The first patient was a boy of 5 whose eye required enucleation from a traumatic injury. The sympathetic inflammation subsided entirely under this treatment and the child was dismissed in eight weeks with vision of 0.5. In the second case the sympathetic inflammation developed, with fever, five days after the enucleation of the injured eye. On recovery, the visual acuity was 0.8. The third patient was a young man with gonorrheal conjunctivitis with perforation of the cornea. The sympathetic ophthalmia took an unfavorable course, but even in this case the salicylate improved conditions remarkably in a daily dosage of from 8 to 9 gm. (120 to 135 grains), the inflammation completely subsiding, although cataract developed. As a rule, the sympathetic ophthalmia is not seen until it is well under way. In 3 of the 17 cases no benefit was observed from the salicylates, while 67 per cent. recovered under this treatment. In 5 cases the salicylate had been given for some time before the development of the sympathetic inflammation on account of iridocyclitis in the injured eye. This probably contributed to attenuate the intensity of the sympathetic process.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Intestinal Autointoxication. By A. Combe, M.D., Professor of Clinical Pediatry at the University of Lausanne (Switzerland) together with an Appendix on the Lactic Ferments with Particular Reference to Their Application in Intestinal Therapeutics, by Albert Fournier, Formerly Demonstrator at la Sorbonne, Paris. Authorized English Adaptation by William Gaynor States, M.D., Clinical Assistant in Rectal and Intestinal Diseases, New York Polyclinic. Cloth. Pp. 461, with illustrations. Price, $4.00. New York: Rebman Co., 1908.

Médicaments Microbiens: Bactériothérapie, Vaccination, Sérothérapie. Par Metchnikoff, Sacquépée, Remlinger, Louis Martin Vaillard, Dopter, Besredka, Wassermann, Leber, Dujardin-Beaumetz, Salimbeni, Calmette; vol. xi, Bibliothèque de Thérapeutique publiée sous la direction de A. Gilbert et P. Carnot. Cloth. Pp. 400, with illustrations. Price, $1.60. Paris: Librairie J. B. Baillière et Fils, 1909.

The Tuberculosis Infirmary of the Metropolitan Hospital, Department of Public Charities, New York City. By Walter Sands Mills, A.B., M.D., Chairman of the Tuberculosis Committee of the Medical Board. Paper. Pp. 63, with illustrations. New York: Martin B. Brown Co., 1908.

Atlas der Syphilis und der Venerischen Krankheiten mit einem Grundriss der Pathologie und Therapie derselben. Von Hofrat Professor Dr. Franz Mracek in Wien. Cloth. Pp. 218, with illustrations. Price, $4.00. München: J. F. Lehmann's Verlag, 1908.

Clinical Bacteriology and Hematology. By W. D'Este Emery, M.D., B.Sc. Lond., Pathologist to the Children's Hospital, Paddington, Green. Third Edition. Cloth. Pp. 252, with illustrations. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1908.

American National Red Cross Text-Book on First Aid and Relief Columns. By Major Charles Lynch, Medical Corps, United States Army. Cloth. Pp. 247, with illustrations. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1908.

Proceedings of the American Society for Psychical Research. Vol. II. Part 2. September, 1908. Paper. Pp. 378. Price, $2.50. Published by the Publication Committee of the Society, Tribune Building, New York.

Transactions of the Thirtieth Annual Meeting of the American Laryngological Association, held at Montreal, Canada, May, 1908. Cloth. Pp. 421, with illustrations. New York: Published by the Association, 1908.

Transactions of the Medical Association of the State of Alabama, (State Board of Health) Montgomery, April, 1908. Cloth. Pp. 717, with illustrations. Montgomery: Brown Printing Co., 1908.

Instinct and Health. By Woods Hutchinson, A. M., M.D., Lecturer on Clinical Medicine, New York Polyclinic. Cloth. Pp. 334. Price, $1.20. New York: Dodd, Mead & Co., 1908.

Angina Pectoris. Von Dr. Louis Peiser, Arzt am deutschen Hospital und deutschen Dispensary der Stadt New York. Paper. Pp. 106. Stuttgart: Verlag von Ferdinand Enke, 1908.

New Patents

Recent patents of interest to physicians:

899196. Sanitary protector. A. M. Aiken, Cleveland, Ohio.
899284. Manufacture of sulphuric acid and sodium sulphate. U. F. Benker, Clichy, France.
899289. Apparatus for purifying and humidifying air. W. G. R. Braemer, Buffalo, N. Y.
899222. Obstetric forceps. H. E. Koch, Hartington, Nebr.
899225. Respiration apparatus. P. Lord, deceased, Worcester, Mass. M. V. Lord, administratrix.
899175. Speculum. W. Meyer, Chicago.
899434. Obstetric appliance. A. M. Reed, Washington, D. C.
899234. Massaging instrument. J. B. Wantz, Chicago.
899477. Dilator and applicator. W. E. Williams, Massillon, Ohio.
899279. Stretcher. H. Wilson and R. B. McFarland, Conneaut, Ohio.
39568. Design, Druggist's sign. R. A. Walter, New York.
899728. Impregnator. F. B. Graham, Garnett, Kans.
899875. Peptisating colloidal elements. H. Kuzel, Baden, near Vienna, Austria-Hungary.
12858. Reissue, Pasteurizing apparatus. L. S. Pfouts, Canton, Ohio.
900038. Treating extracts of quebracho. L. Pollak, Wilsdorf, near Bodenbach, Austria-Hungary.
899760. Capsule-placing device. J. P. Remington, Philadelphia.
899761. Capsule-filling mechanism. J. P. Remington, Philadelphia.
899815. Ausculta-phone. L. A. Townsend, Fort Dodge, Iowa.
12859. Reissue, Manipulator. J. W. Weber, Pittsburg, Pa.
900343. Surgical instrument. W. H. Barnes, Homewood, Miss.
900150. Catamenial appliance. D. S. Daudt, Plainfield, N. J.
900493. Appliance for treatment of rheumatism and other diseases. D. R. Dewey, Hamilton, Ont., Canada.
900168. Aseptic package for vaccine or virus. C. H. Higgins, Ottawa, Ont., Canada.
900373. Physicians' medicine case. J. O. Hunter and W. L. Hunter, Red Sulphur Springs, and W. A. Wykel, Hinton, W. Va.
900182. Syringe, K. L. Mayers, St. Louis.
900565. Vaginal syringe. K. L. Mayers and M. B. Benas, St. Louis.
900580. Clinical and other thermometer. C. Nurnberg, New York.
900602. Massage-vibrator. W. G. Shelton, Chicago.
900138. Manufacture of arsenious oxid. U. Wedge, Ardmore, Pa.
900250. Rupture truss. A. Young, Laporte, Ind.
900835. Antiseptic organic silver compound. M. Dodsworth, Detroit.
901100. Syringe. A. H. C. Heitman, Detroit.
901009. Making chloracetic ether. G. Imbert, Nuremberg, Germany.
901177. Radioactive composition. R. Keil, Eisleben, Germany.
900868. Preparing concentrated hydrated magnesia. W. S. Morrison, San Francisco.
900957. Tablet machine. E. L. Richards, Philadelphia.
900961. Production of magnesium by electrolysis. G. O. Seward and F. von Kugelgen, Holcombs Rock, Va.
900962. Production of barium and barium alloys. G. O. Seward and F. von Kugelgen, Holcombs Rock, Va.
900892. Treating alkaline deposits for recovering soda, etc. J. C. W. Stanley, Los Angeles, Cal.
901708. Making camphor. J. Hertkorn, Berlin, Germany.
901709. Making iodin products. J. Hertkorn, Berlin, Germany.
901628. Surgical table. S. M. Langworthy, Cedar Rapids, Iowa.
901370. Device for raising invalids. L. Poppert, Milwaukee, Wis.
901742. Catamenial sack support. H. M. Richards, Joliet, Ill.
901937. Tablet forming machine. B. W. Scott, Detroit
901567. Device for extracting matter from inflamed tissues. W. G. Utschig, San Jose, Cal.